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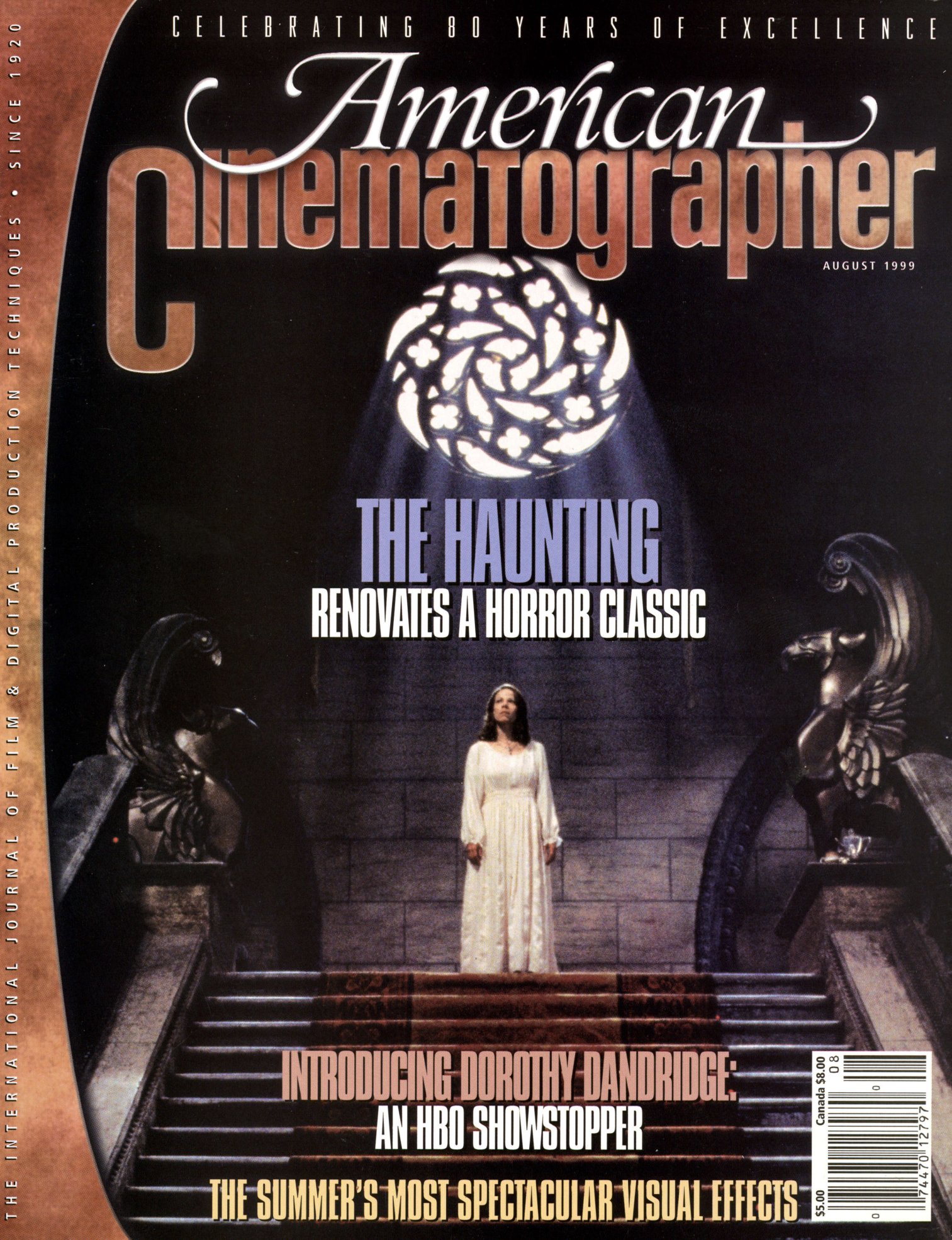

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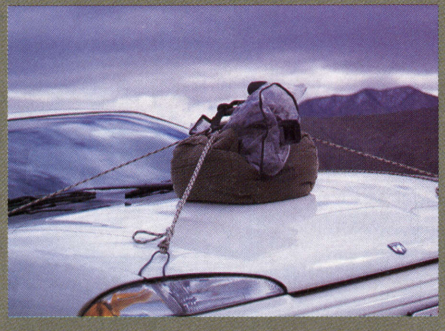

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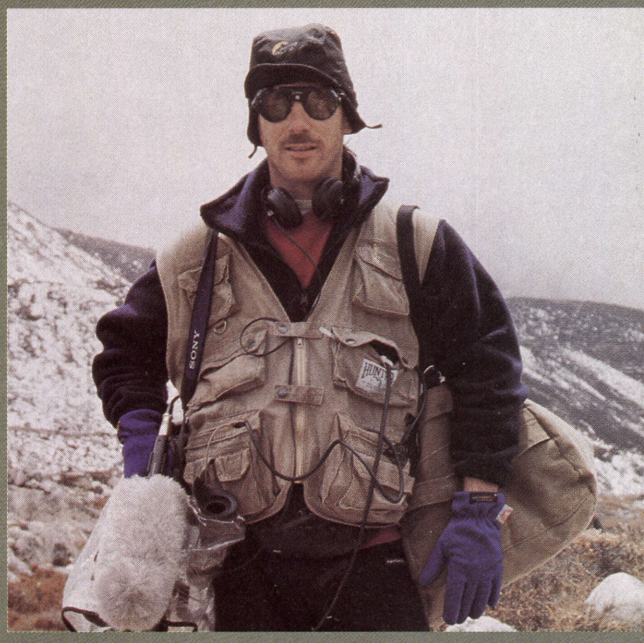

Rick Young - Europe, Digital Production
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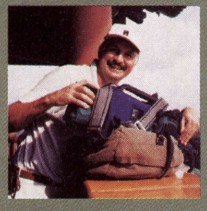

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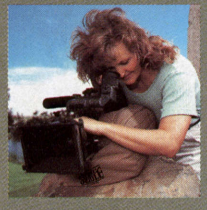

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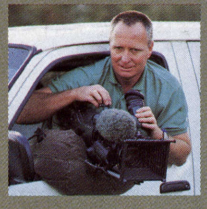

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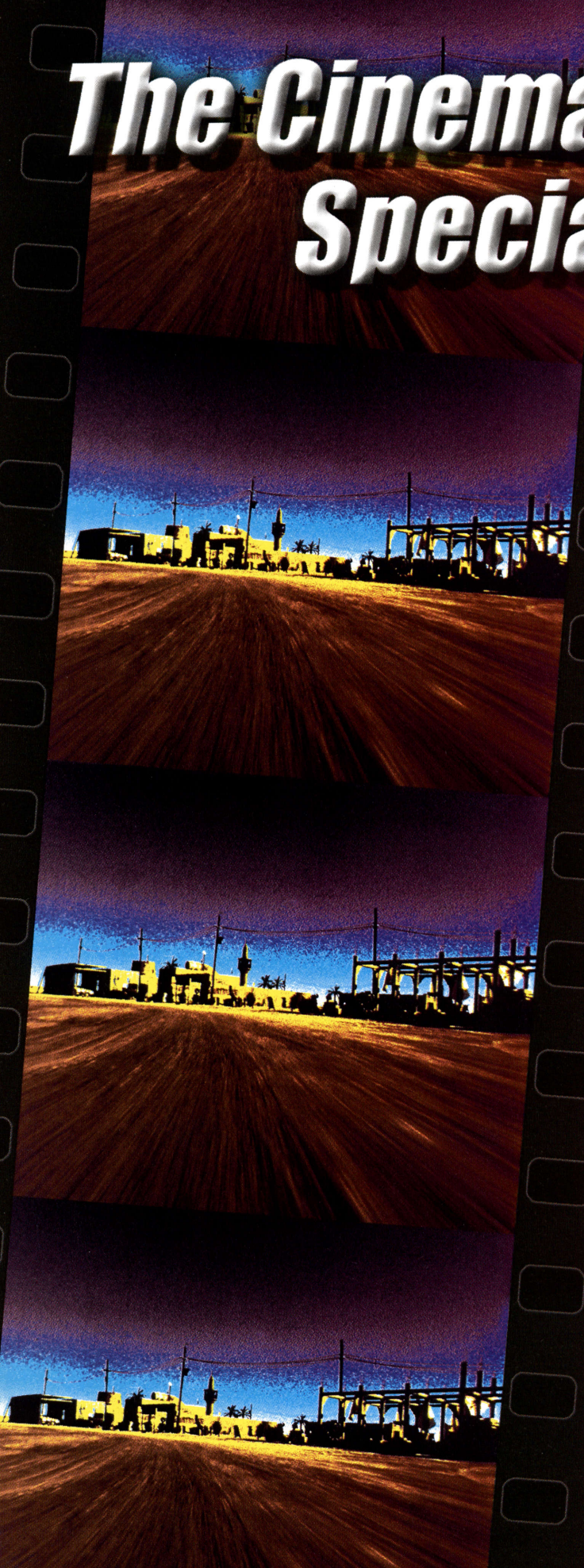

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The International Journal of Film & Digital Production Techniques

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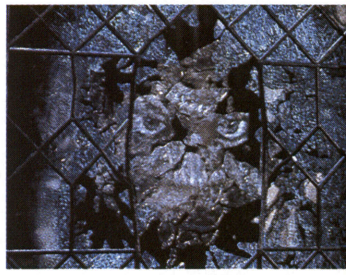

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On Our Cover: Eleanor Lance (Lili Taylor) confronts the demons of Hill House in *The Haunting*, a supernatural chiller directed by Jan De Bont, ASC and photographed by Walter Lindenlaub, ASC, BVK (photo by Frank Masi, courtesy of DreamWorks SKG).

Contributing Authors:
Stephanie Argy
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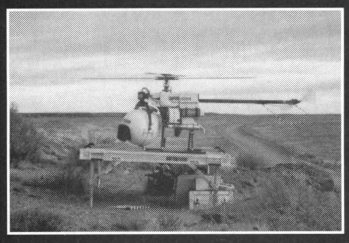

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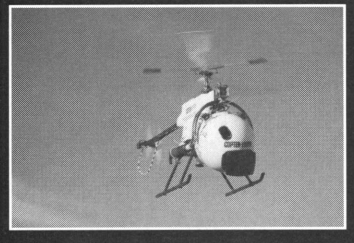

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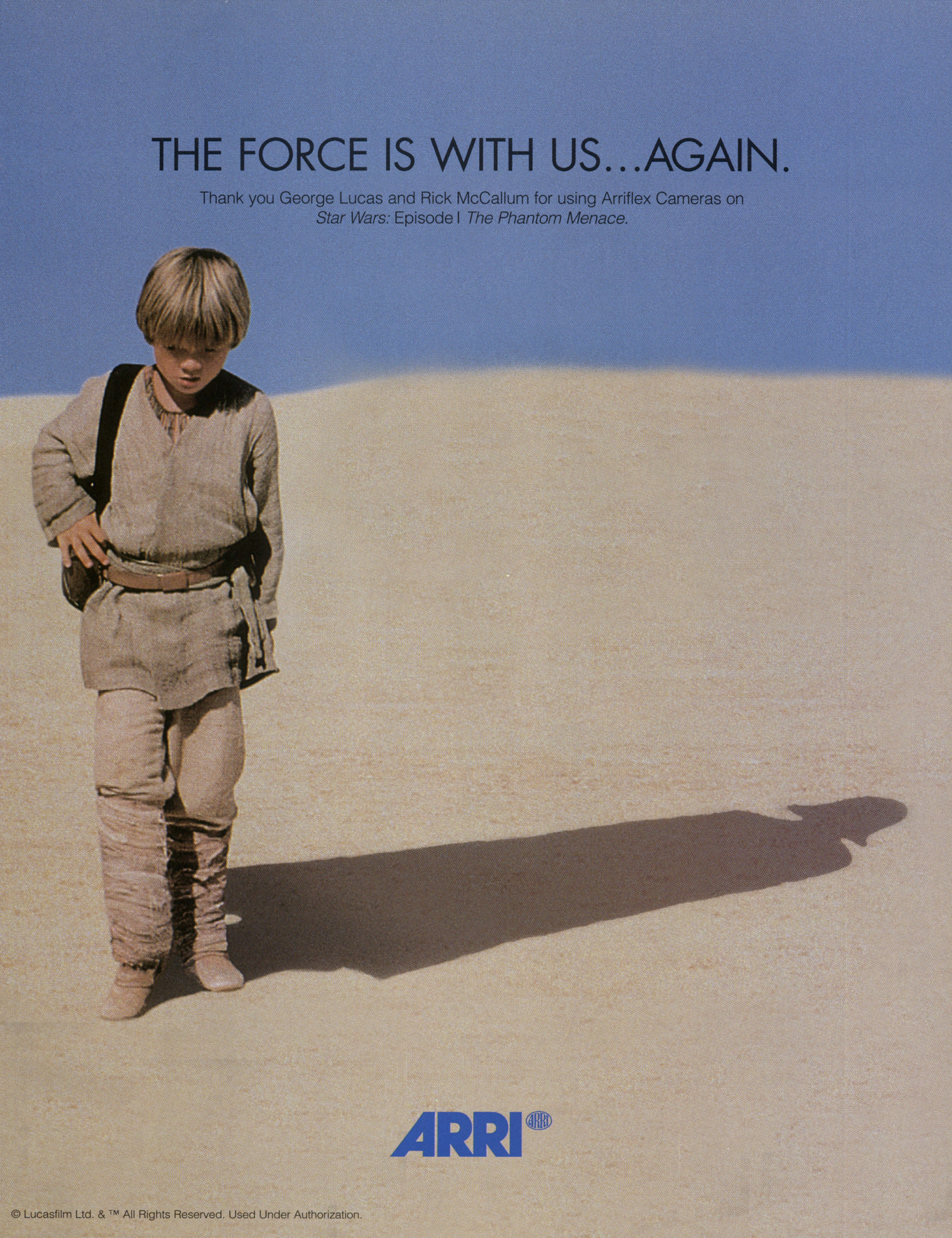
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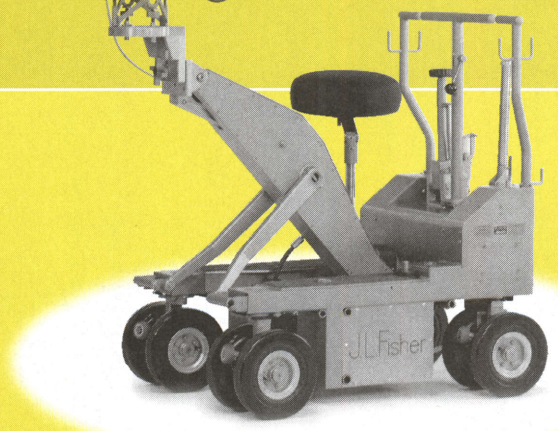

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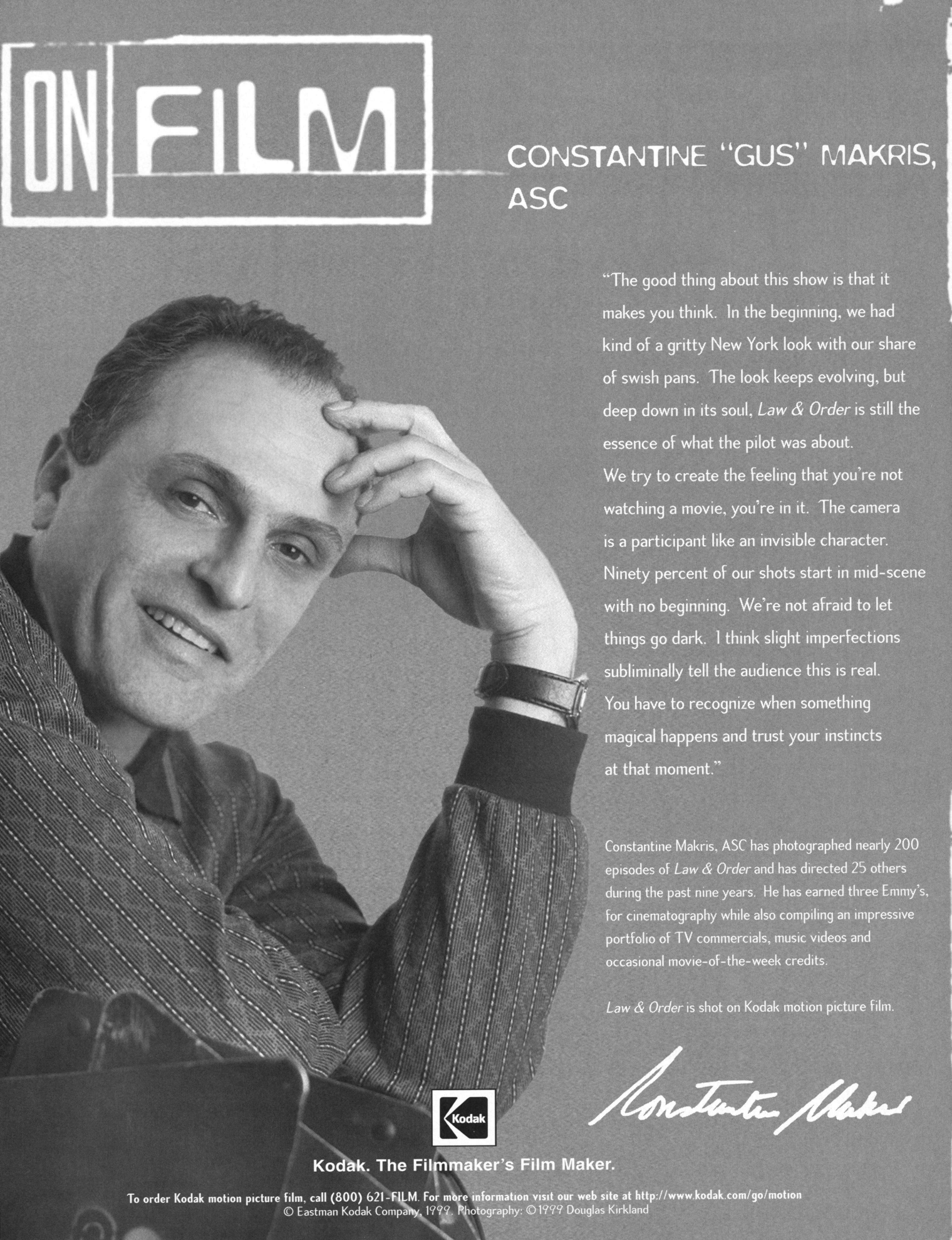
ON FILM
CONSTANTINE "GUS" MAKRIS, ASC
"The good thing about this show is that it makes you think. In the beginning, we had kind of a gritty New York look with our share of swish pans. The look keeps evolving, but deep down in its soul, *Law & Order* is still the essence of what the pilot was about.
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Constantine Makris, ASC has photographed nearly 200 episodes of *Law & Order* and has directed 25 others during the past nine years. He has earned three Emmy's, for cinematography while also compiling an impressive portfolio of TV commercials, music videos and occasional movie-of-the-week credits.
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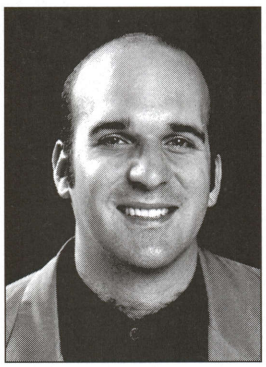


This month, regrettably, I have some sad news to report: *American Cinematographer*'s former editor, historical guru and intrepid book reviewer, George E. Turner, passed away recently at the still-vital age of 73.

I need not explain the magnitude of this loss to faithful readers of *AC,* who have enjoyed George's witty and informative prose since he joined the magazine in 1982. Those of you who didn't know George personally should turn to page 117, where you'll find a heartfelt In Memoriam piece penned by his writing partner, Michael H. Price, who collaborated with George on the delightful books *Forgotten Horrors* and *The Cinema of Adventure, Romance & Terror.* I'd like to take the liberty of using this space for my own personal reminiscence.

George was a truly wonderful man with a gentle soul, and I owe him a great deal. After all, he and his beloved wife, Jean Wade Turner, who passed away last year (see *AC* "In Memorium" June 1998), hired me as an editorial assistant back in 1991.

The first time I met George and Jean, I knew they were my kind of people — friendly, unpretentious and totally down-to-earth. I discovered this the moment I arrived at the magazine's offices for my job interview. Fresh into town from the oh-so-proper East Coast, I showed up wearing an earnest expression and a goofy, young-guy-needs-a-job suit. Jean, who was then *AC*'s associate editor, took one look at me and asked in a slightly concerned voice, "You don't *always* dress up like that, do you?" I knew I was in the right place, and happily loosened my tie.

True to form, Jean got right down to business, firing off a string of questions about my experience, my writing abilities, and so forth. After a few minutes of her intense grilling, George casually cut in with a comment about his favorite movie, *King Kong,* and we were off to the races. He and I began babbling away about old movies until Jean, in a total state of exasperation, barked at both of us, "Are you two ever going to shut up so I can finish this interview?" George and I stopped in our tracks and traded sheepish grins, like two kids with their hands caught in a cookie jar. Needless to say, I knew I had the job.

Working for George was a great experience, and I learned a lot from him. The most important lesson he taught me was how to handle people. While he was the editor of *American Cinematographer,* he was unfailingly polite, and that's not always easy in Hollywood. No matter what people threw at George, he was always a consummate gentleman, which impressed me to no end. He kept alive the kind of class and good manners that you don't often see anymore.

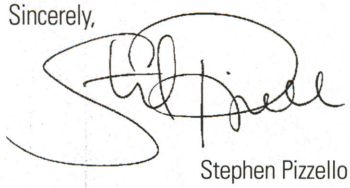
I also found that George was a formidable font of movie knowledge. A few weeks after I was hired, he took me on my first set visit over at Warner Bros. Before we headed off to the soundstage, we took a quick tour of the lot, and George told me all kinds of stories about the place. At one point, as we passed by a prop storage area, he pointed to a large faux fireplace that was sitting nearby and commented in his trademark Texas drawl, "Y'know, that fireplace was used in this great old picture from 1933… " He told me the name of the movie, which escapes me now, but I thought to myself, "This guy's got to be putting me on. There's no way he can possibly know that this particular fireplace appeared in a movie that was made almost 60 years ago." But that same week, I rented the movie on VHS, and sure enough, it was the same fireplace! I bet if I'd pressed him on it, George could have even told me the number of logs that were used in the scene.

George joined Jean in retirement not too long after I was hired, but he was always there to help out the magazine staff. After I was named executive editor in 1995, I knew I could always count on him if I needed some sage advice or an expertly crafted article. George really taught me that talent and professionalism don't always come in flashy packages. His copy was always a joy to read, and always turned in on deadline.

This month, readers can savor his last historical article, about Robert Wise's 1963 version of *The Haunting* ("Elegant Chills," page 82), and his final Books in Review column (page 107). Both pieces make it clear that George was still a master craftsman; in fact, during my tenure as editor, I'd developed the habit of saving his articles as a reward for myself after plowing through other pieces that were filled with dubious grammar and garbled syntax. The best compliment you can pay to a writer is to say that you're always glad to see their byline, and I was always glad to see the name George Turner. He was a great writer and a great friend, and I'm really going to miss him.

Goodbye, Guv'nor.

Sincerely,



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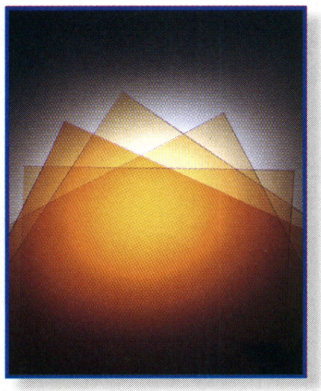

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Letters

Cut-and-Paste Cinema

I was fascinated by Rudy Behlmer's recent article on the use of stock shots in motion pictures ("Deja View," *AC* June '99). It was dismaying to read how many silents were chopped up to provide production values for B pictures. (In those days, of course, a dupe negative would have been too crude.) The practice continued even at so prestigious a studio as MGM. The amazing track-up-the-skyscraper scene in King Vidor's *The Crowd* (1928), photographed by Henry Sharp [ASC], was cut out of the original negative and put into a Keaton talkie — I think it was *Sidewalks of New York* (1931). When David Gill and I were working on *The Crowd* for Turner Classic Movies, we had to request the sequence from a 16mm copy at George Eastman House, blow it up and put it back in — the quality suffers as a result.

Likewise, we never found out who pinched the "horizontal love scene" from the Garbo-Gilbert *Flesh and the Devil* (1926), but an entire reel lapses into a miserable dupe. Really tragic.

A collector friend in Paris acquired a batch of rare 16mm prints, most of them from the old Kodascope library, whose lab work was second to none, and most of whose prints were tinted. One turned out to be the lost film *The Flaming Frontier* (1926) with Hoot Gibson. The picture climaxed with a spectacular version of Custer's Last Stand, but someone had snipped it out. The story builds up to it with stunning long shots of cavalry and Indians, but then the sequence disappears and you just see the aftermath. Does any collector or stock library have it? It would be a gift to posterity if we could at least copy it. The stock footage appeared in the 1930 Universal serial *The Indians Are Coming,* but only one or two shots from the big sequence were used.

We also have a fine Jack Hoxie Western, directed by George Marshall, called *Don Quickshot of the Rio Grande* (1923), from which someone has removed all the stunts. Has anyone got the missing scenes?

— Kevin Brownlow
London

Introducing: KING KONG'S COUSIN QUEENIE
(Art by GEORGE TURNER; see page 6)

Thumbs Up to George Turner

The help given by *American Cinematographer* to smaller periodicals is delightfully apparent in [the above] drawing of King Kong by your former editor, the late George Turner. George gave it to Atlanta's *Night Owl's Newsletter* in 1993 because I had asked for his aid. I was an editor at *Night Owl's,* a quarterly publication for people who sleep poorly, and we needed a cover. Dull indeed is any art showing people sleeping!

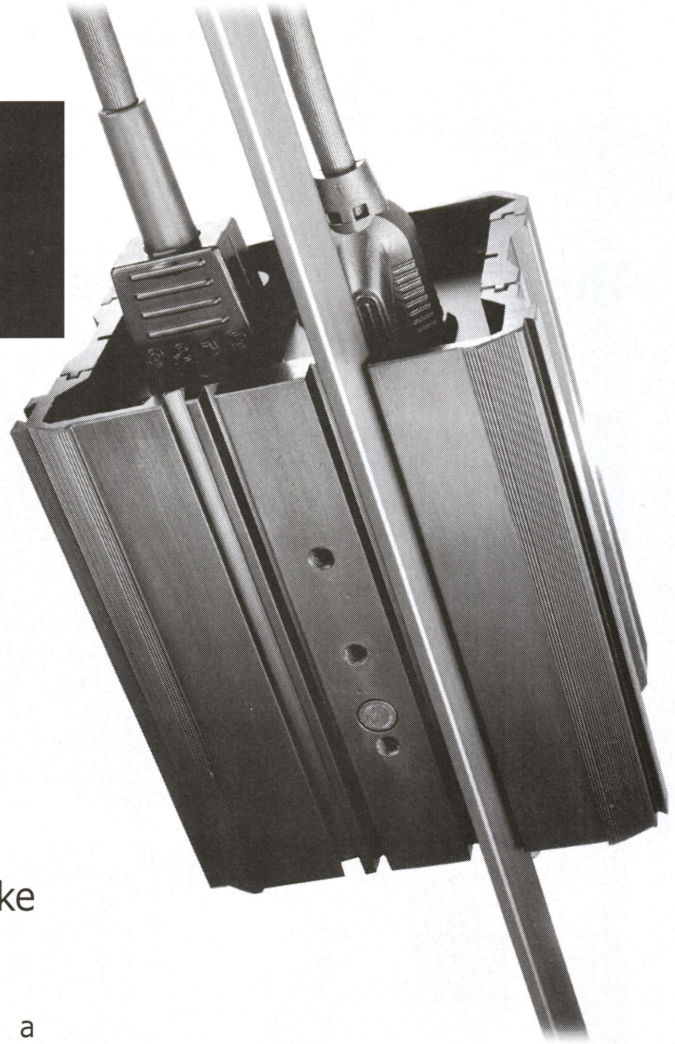
George devised a novelty for us, penning a cartoon of Kong, his favorite film character. Instead of showing Kong grasping Fay Wray in his immense hand, George drew the ape holding a little owl named Queenie.

In rushing, however, George made a ridiculous error: he put Kong's thumb on the wrong side of his left hand! I quickly collected a corrected drawing from George and sped it to Atlanta, but I was too late — what you see here had gone to press.

Sleep well, George.

— Bud Lesser
Los Angeles

No dumb dimmer.



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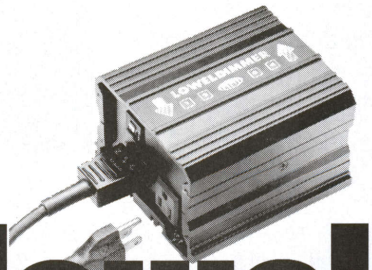

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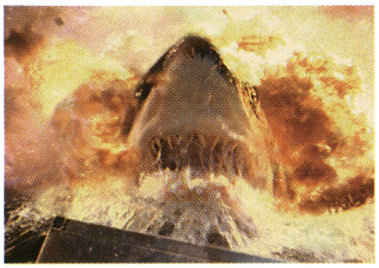
The Film Factory Makes Its Mark

by John Gainsborough



Clockwise from top: An enhanced vista from *The Wings of the Dove*; Film Factory heads Alan Church and Simon Giles; a gallery of virtual paintings from *Tea With Mussolini*; fireball effects and compositing done for *Deep Blue Sea*.

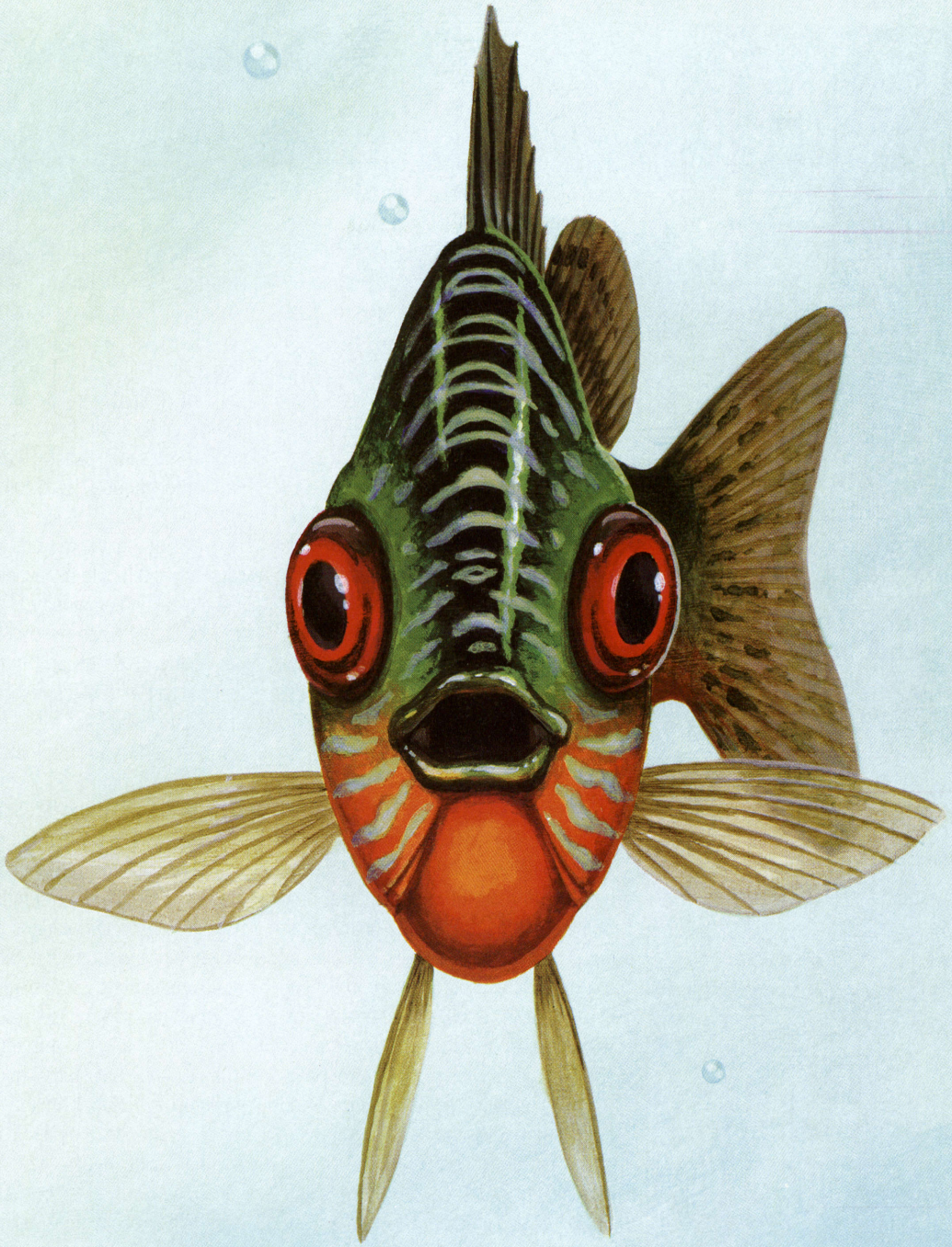
Situated centrally within London's trendy Soho district, The Film Factory was set up in 1996 as the digital visual effects division of VTR, a large postproduction group. While the firm is digitally equipped with a Quantel Henry, two Quantel Dominos and a Solitaire scanner, and offers full access to telecines and other equipment within the group, it's based firmly on the old-school principles of cinema. "Our staff is half from film and half from electronic backgrounds," emphasizes Alan Church, who heads up VTR's film division. The organization provides him with a versatile, multi-skilled team that's proven its ability to handle a wide variety of jobs, including the essentially invisible effects for *The Wings of the Dove*, computer graphics for 183 shots in *Lost in Space,* and explosions and other effects for the upcoming Warner Bros. thriller *Deep Blue Sea*.

Church himself has extensive experience in film opticals, bluescreen photography, back- and front-projection and model work, including stints as an operator and crew member on model units. His career ambitions eventually led him away from the studios and into Cinesite (London) as a digital effects producer. Switching tracks gave him an invaluable insight into the American market, and his previous experience made him an ideal candidate to start The Film Factory for VTR. At an early stage, Church was joined by Simon Giles, a graphic designer who'd been working in television. Starting from scratch, the duo got the firm equipped, staffed-up and running within four months.

Church and Giles's creative dynamic is enhanced by their respective — and rather complementary — backgrounds. The latter's early graphic design experience was based on storyboards, drawings and models, and that ubiquitous artistic instrument, the 2B pencil. He was also one of the initial designers to use Quantel's prototype Paintbox when it was first introduced at the BBC. As well as being The Film Factory's visual effects director, Giles works variously as digital effects producer or title designer on the company's different productions. He recently finished producing the digital effects on *Tea With Mussolini*, and is currently working on *Deep Blue Sea* and *Gormenghast,* a major BBC series that's slated to air at the turn of the millennium.

A large 3-D animation "studio" within The Film Factory gives the company the flexibility to adjust to a

Photos courtesy of The Film Factory at VTR.



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varying workflow. If a gap occurs between features, the staff can adapt to produce animated titles or work on commercials or trailers. In-house film cameraman Peter Talbot shoots plates, live action or any other element required to meet client briefs. He's also responsible for all Domino scanning-in (done from the original negative wherever possible) and scanning-out. Recently, Talbot was involved in *The Clandestine Marriage,* which at one point called for a sudden flood to swamp its set. In addition to shooting 35mm plates for this effect, Talbot also photographed stills on location. Later, the trees in the stills were animated to provide a convincing plate, across which cascading water (shot separately at Pinewood) was composited on the Domino at film resolution. Since all of the processes could be done in-house, Church and Giles had close control over the finished effect.

For low-resolution work, previsualization or design approvals, Giles notes that the staff often works on the Quantel Henry, which enables them to have much more efficiency later on the Domino. The Film Factory's understanding of cinematic processes has already given them a reputation for providing cost-effective visual effects solutions. When working with American studios, the firm usually sends tapes to Hollywood via overnight courier, and discusses the results the next morning. This type of arrangement was recently established with Geoff Okun, visual effects supervisor on *Deep Blue Sea,* which is just one of 47 features that the company has worked on since it began operations. (The Film Factory has found this method of tape exchange to be the easiest means of communication even though the company is on Sohonet, the fiber-optic network linking most Soho post houses to each other and, by extension, to L.A.)

Tea With Mussolini, a feature set in Italy during the late 1930s, demonstrates a complex problem that would have been extremely difficult to solve prior to the introduction of digital film manipulation. In one sequence, actress Cher and her male companion converse while moving against a backdrop of Picasso paintings. Though the canvasses appear to be Picassos, they are, in fact, copies. Due to copyright problems, however, The Film Factory was asked to alter the background paintings while maintaining the couple's outline, including the silhouette of Cher's very fine hair against the canvasses. This task didn't faze The Film Factory; the firm had previously performed an insurance "repair" on *Cousin Bette* (1998), replacing Jessica Lange's forehead throughout a 10-minute sequence after she'd had an on-set accident.

"Getting work from America is sometimes difficult, because Hollywood is a close-knit community," Alan Church admits, "but we do get work because of our ability to adapt, and through informal contact with studio executives. It is also easier when American productions come to Britain, since it makes sense to do post in London."

The Soho post community is equally close-knit in terms of personnel and physical proximity, but the atmosphere is also highly competitive. On occasion, however, various firms have shown that they can cooperate on large-scale productions. *Lost in Space* inspired several Soho post houses, including The Film Factory, to form a friendly alliance (see *AC* April '98). Adds Church, "When we stop for a drink in the evening to meet our friends, they are likely to be in another post house just 'round the corner, which makes cooperation very easy. We are all within walking distance of one another."

As the strength of The Film Factory's digital visual effects work has become more well-known, a slew of resumés from American artists have deluged the outfit's Dean Street offices. Perhaps these would-be expatriates prefer the idea of going from one tightly knit creative film and effects community to another, with the added benefit of joining an environment that's up close and personal. ■

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Production Slate

compiled by Andrew O. Thompson

Traveling to *Twin Falls Idaho*

by M. David Mullen

Siamese twins Blake and Francis Fall (Michael and Mark Polish) meet Penny (Michele Hicks), who soon comes between them.

Photos by Sebastien Raymond, courtesy of Sony Pictures Classics/Magic Lantern, Inc.

Twin Falls Idaho is a melancholy, romantic and sometimes comical story directed by Michael Polish and co-written with his identical twin brother, Mark. The pair play a pair of conjoined twins (also known as "Siamese Twins") named Blake and Francis Falls in this indie feature, which screened at the recent Sundance Film Festival and was picked up for distribution by Sony Pictures Classics.

As the movie opens, Blake and Francis are checking into an old hotel. One calls an escort service to arrange a date for the other as a birthday gift, and a young woman named Penny (Michele Hicks) arrives soon after. Initially repelled by the twins, she eventually befriends them. Over time, Penny becomes attracted to Blake; he returns her affections, which leads to a conflict with the jealous Francis. The situation becomes even more complicated because Francis, who suffers from a weak heart, is very ill. Penny later learns that the two brothers have traveled to the city to find their estranged mother, who gave them up for adoption as newborns.

The Polish brothers and I had previously worked together on a short film called *Bajo Del Perro,* and I was excited when they asked me to photograph *Twin Falls Idaho,* despite the project's small budget and 17-day shooting schedule.

During a long preproduction period, the Polish brothers and I worked closely to determine the film's look. Michael's dominant thought was that it should be painterly and static, with an emphasis on natural light. Primarily, he had in mind the works of Vermeer. To the mix we added Edward Hopper, with his lonely images of city life and use of artificial light sources in night scenes, as well as Edvard Munch's psychological use of colors. We were inspired by a sickly green that Munch sometimes used for the color of background walls. Green has many meanings — decay, disease, repose and rejuvenation. We felt that the hotel should have an odd, timeless quality, and that certain shades of green would help create a strange tone, neither positive nor negative. Green also has the advantage of being neither a warm nor cold color, with the ability to become either in certain lighting. This transient quality allowed us to alter the room's mood by changing the lighting's color bias as the story dictated.

We briefly discussed whether the film should be shot in black-and-white, which would help create a dramatic look along with a timeless quality. Beyond the inevitable resistance from any future distributor, there were a number of downsides to this approach: for one, the use of color symbolism would have been impossible; there was also the fear that the project was already "arty" enough, and that black-and-white was too obvious a choice.

Our solution was to shoot in color but desaturate the image enough to achieve the mood and tonality of black-and-white photography. Although art direction would be an important component, we also decided to check into the skip-bleach (or bleach-bypass) method of printing, in combination with flashing the negative, an approach used on such films as *Seven.* (See the article "Soup du Jour" in *AC* Nov. 1998 for details on this and other processes.)

At Panavision, I shot tests of the Polish brothers in their Siamese-twins wardrobe, using a variety of lighting-contrast ratios, colored lighting and flashing percentages (with the

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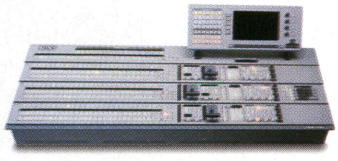

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Above: Cameraman M. David Mullen plots a shot of the Polish brothers. Right: Penny romances Blake while Frances tries to sleep.

Panaflasher). I selected a number of Fuji color negative stocks for the test; I've shot Fuji many times and have always been happy with the results. For the test printing, we decided to use Deluxe Labs' CCE (Color Contrast Enhancement) process, which is a slight variation of straight skip-bleach processing.

The test results showed that the CCE printing process had almost the opposite effect of negative flashing. The two procedures canceled each other out except in one area: color saturation. Both approaches lower color saturation in different ways, but the combination left the final result noticeably desaturated: the more pastel colors, such as fleshtones, were visibly affected much faster than the more saturated colors within frame. The slightly monochromatic image also had some of the silvery, gritty quality that one associates with black-and-white prints.

Having never used flashing before on a feature, I wanted to play it safe. The tests made it look as if 15 percent flash would be a good level to combine with CCE printing. Flashing at a ratio higher than 25 percent began to visibly lighten the blacks, even with the CCE prints' higher contrast and black density. I based my decisions upon a projected print made on Kodak's 5386 stock.

During our short production period, I shot the majority of the project on Fuji's medium-speed 8551 F-250 and 8561 F-250D — both rated at 160 ASA to achieve a dense negative. I didn't want any graininess in the negative to add to the silvery grain visible in the print. I could have used the tungsten-balanced 8551 for *all* of my interiors, but I decided that it would look more interesting to shoot the film's earlier day scenes with tungsten-balanced stock in uncorrected daylight. Then, later on, I would switch to daylight-balanced stock (8561), maybe even using coral filters to increase the image's warmth. Having an overly blue-biased negative in the early scenes would make for more desaturated, monochromatic and cold fleshtones, due to the lack of density in the reds. Later in the film, the negative's warmer image would bring about a normal fleshtone saturation with perhaps a corresponding saturation loss in the blue hues.

I thought that the film should begin in very cold, blue-green tones — almost as if the scenes were underwater — and move into warmer colors as Penny

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befriended the twins. Therefore, the first interior — the hotel room where Penny meets Blake and Francis for the first time — was set at twilight. We bathed the room in very soft, dim blue lighting. When the twins stepped into the small bathroom to get Penny a glass of water, I covered the window with a green plastic curtain so that very dim green light would shine through. Between blue dusk falling in the main room and the bathroom's soft green light, we definitely got a watery, dreamlike feeling. All of this footage was shot under daylight illumination on 8551 using the Panaflasher set at 15 percent — the most common stock and flashing combination employed throughout the shoot.

In terms of lenses, I tried to work with more neutral focal-lengths — mostly in the 35mm to 75mm range — to avoid distortion and maintain compositions with a classical, painterly quality. We occasionally went to a 27mm Primo to get a wide shot in the small rooms, or to make a dolly move more dramatic. However, more than half of *Twin Falls Idaho* was shot on the 75mm Primo. Michael and I liked the visual precision and consistency that came from using prime lenses in a limited number of focal lengths — we didn't even carry a zoom lens on the show.

Kino Flos often functioned as my main source lights. We were filming during a summer heat wave in small rooms with poor ventilation, so using fluorescents helped keep the temperature down. For one love scene, I wanted a soft backlight over the bed. At first, I considered using Chinese lanterns, but those fixtures are difficult to flag off of walls. I ended up hanging four-bank Kino Flos from a rail cantilevered over the bed. We could easily raise or lower the light just above the frameline, creating a very nice soft backlight over the bed with minimal spill.

The film's last sequence is an epilogue of sorts, so I suggested that Michael edit it onto its own projection reel for processing without silver retention or negative flashing. This return to "normal" color saturation coincides with a location change from metropolis to countryside. I shot those exteriors on the new Fuji F-64D 8522, which provided a beautiful look with rich colors.

A couple of weeks after principal photography wrapped, a small group of us went out to an abandoned cliffside road over the ocean to shoot a dream sequence that appears right after the twins are wheeled into surgery at a hospital. In the dream, we see the twins — no longer conjoined — riding on bicycles until, at one point, they take different paths and separate forever. This vision falls between the film's desaturated scenes and the epilogue with its normal color saturation. We shot it on Super 8 using Kodachrome 64 in rather foggy weather with a hot, hazy background. This footage was later transferred to 35mm by rephotographing the image during its projection onto a white screen (with no sync box, resulting in a slightly pulsating image). Kodachrome's contrast, combined with the cloudy weather, produced a burned-out background that lent the imagery a very surreal quality.

While doing the film's answer-print at Deluxe Labs in December of 1998, we tested the first reel with CCE and determined that the contrast buildup was *too* high. Though it was quite striking, our ability to print scenes darker was limited, due to so much picture information being lost in the shadows. Our timer, Bob McMillan, suggested switching to the ACE process, which, even at full strength, was not as strong as CCE. Even though the ACE had a more subtle desaturation than what appeared in our tests, we were very happy with the results. The image had a brooding, dark quality, with softer colors and incredibly rich blacks. Without ACE, the last reel signaled an interesting shift in the image's emotional tone, almost as if "reality" had returned with its very natural colors and contrast.

We made two prints with the 5386 stock and the 100 percent ACE process. After the Sundance screenings, however, Kodak replaced 5386 with the two new Vision print stocks, and all supplies of the older stock became

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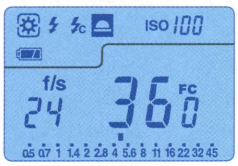

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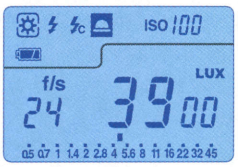

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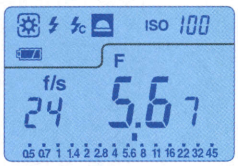

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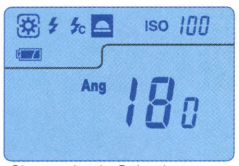

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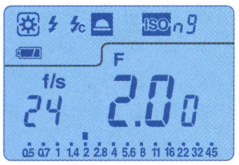

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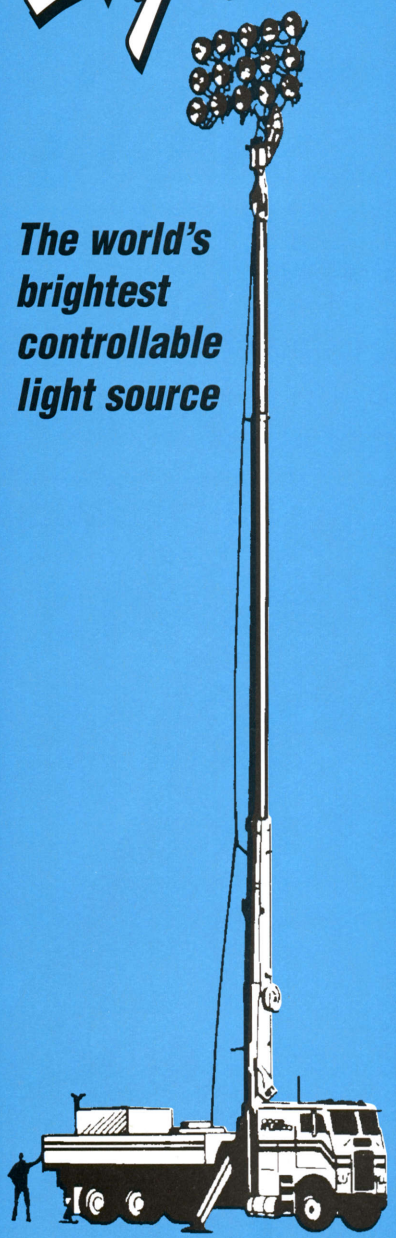

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impossible to find. Sony had Deluxe Labs make a dupe negative for release printing, but the full ACE process, combined with the Vision stock (2383), produced a print too *high* in contrast. Working with Beverly Woods and Bob McMillan at Deluxe, we solved the problem by cutting the ACE level in half. Normally, this would mean a different degree of desaturation, but the dupe negative's final saturation ended up being similar to the 5386/100 percent ACE prints struck from our original negative. Plus, the release prints' black levels and contrast now matched our initial results. The only difference was the expected slight increase in graininess due to the use of a dupe negative.

Return to *Oz*

by Eric Rudolph

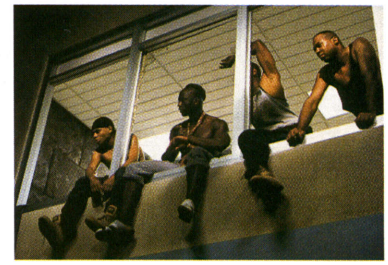
Manhattan is known as a town brimming with surprises, but an especially unusual experience awaits visitors to the 10th floor of a former industrial bakery building in the West Village's gritty meat-packing district.

There, the permanent set of HBO's hit prison drama *Oz* quite convincingly fills some 65,000 square feet of space. After wandering through a low-ceilinged corridor of dingy prison cells, a visitor suddenly emerges into the enormous Emerald City, a sparkling, postmodern wing where inmates are enclosed by Plexiglas panes instead of iron bars. Beyond the two tiers of cells lies a large open area where the prisoners linger, conspire and rebel with often frightening authenticity. Further exploration leads to the prison's hospital, administrator's offices and an expansive space that combines a cafeteria, auditorium and occasional boxing arena.

Like *Homicide: Life on the Street* (another series developed by executive producers Barry Levinson and Tom Fontana), *Oz* differs significantly from most filmed series.

During the program's first season, cinematographer Jean deSegoznac (see Points East in *AC* Sept. '97) took a documentary-like approach to the material, relying to a great degree on the set's extensive number of built-in practicals. In the interest of realism and economy, the crew shot as if they were on location — no walls were moved to allow extra room for fixtures or camera setups. This tactic was facilitated by

Harsh prison life is uncompromisingly depicted in the drama *Oz*, which recently began its third season on HBO.



Photos by Eric Liebowitz, courtesy of HBO.

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Scorpio Controller

Three functions. Programmed by a single touch.

The Scorpio Focus Controller serves as the system's Programmer, offering computer menus for three separate functions. Settings are stored digitally and can be easily changed via an easy-to-use touch pad. Ergonomically designed, the unit's focus, iris and zoom controls are easily accessible. The handset's integrated backlit LCD screen makes frame rate, total footage and last-take footage readings visible at a glance. Plus, there are additional outputs for separate zoom and iris controls, and a power output for an on-board witness monitor.

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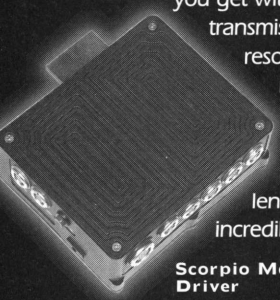

Scorpio Motor Driver

It's a speed aperture control, too.

The Focus also operates as a speed aperture control. Compatible with Arriflex and Moviecam cameras, the Focus controls camera speed, iris & shutter angle. Ramp the camera manually or program a preset time duration and store it into the unit's memory. So repeated shots, multiple takes and complex move sequences are easier to nail.

Remote control rack focus & vertigo effects.

To activate the Focus' Vertigo Tracker control function, just program in a sequence of auto focus and zoom moves. Advance the dolly and the lens is automatically positioned. Repeat the same sequence as the dolly is moved forward & back to provide easy set-up of fast rack focus shots. Or program the focus and zoom with up to 60 points along the belt to create vertigo effects. For this function the Focus is equipped with a digital encoder arm, motor driver interface cable, tracking belt, and universal mounting brackets.

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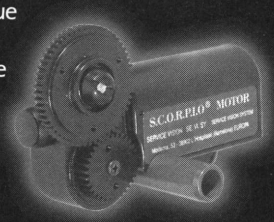

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shooting on standard 16mm.

However, for the current, third season of production on *Oz* (which began in July), director of photography Craig DiBona is approaching his assignment like he might a feature film. The cameraman's firmly held feature orientation stems from the fact that he spent much of the previous decade operating for Gordon Willis, ASC on such films as *Presumed Innocent, The Godfather Part III* and *The Devil's Own.* "The handheld, documentary approach is not a part of my background," DiBona explains. "You do it when a scene demands it or if you have no other choice, but you don't handhold *everything* just to make the day. I wanted to show the producers that you can actually do *Oz* by making shots off the dolly and still have feature blocking and coverage. I want them to have a progression of shots and sizes that will help tell the story more effectively. If you just go back and forth between two shots of two people, the audience is going to get bored — I don't care if they're talking about World War III."

One of DiBona's secrets for shooting as many as 11 pages of dialogue per day came from his close observations of Willis at work. "I tell the directors every shot that we're going to take in the entire scene, so they'll know every cut and every size. That way, they have a chance to get that little accent piece rather than realizing after the fact that the extra shot was needed.

"This is crucial on a show that's put together as fast as *Oz*," DiBona continues. "There just isn't time to go back over your tracks. We've had some directors who've also worked on *Homicide*, which also shoots very long scripts quite quickly, and they've said, 'I thought they went fast in Baltimore, but you guys go faster than anyone in the business!'"

This focus on efficiency allows DiBona time to provide the necessary coverage, locate new angles in various settings and execute more creative lighting. Overhead practicals and bay lights (simulating unseen overhead lamps) provide enough ambiance for *Oz* to be photographed without additional lighting (on Vision 500T 7279 stock). However, part of DiBona's feature-film approach entails lighting nearly every scene individually, and trying to find the motivation for supplemental sources can be quite a task in and of itself. "In the jail cells, it's difficult to justify anything other than the overhead fluorescent practicals," says DiBona. "There's no chance to motivate light from another type of practical, so you have to find some way to add fill. The trick is to be subtle and play it just enough on the edge so that you can see the actors but not be wondering, 'Does that guy have a floor lamp in the cell?' I generally throw in some light through the bars, so it looks as if it's coming from outside of the cell. I'll also add fill through blue-gray gels to suggest a general bounce light off of the gray concrete floors, especially for scenes taking place after the 'lights out' order is given."

Since the set's ceilings are detachable, DiBona does have other options when dealing with complex setups. "There's a mid-season show this year in which [Sister Peter Marie], Rita Moreno's nun character, goes into an Emerald City cell with a prisoner," he reveals. "He backs her into the wall and stands over her in a very threatening way. There are three or four positions for this scene, so I had three or four different teasers cutting light from the ceiling's fluorescent fixture to give me the control I needed. With the overhead source under control, Rita's light came from three or four small lights that my terrific gaffer, Mike Delaney, hung from various places above the ceiling line, in areas where small sections of the cell's ceiling had been removed."

Typically, DiBona deploys Inkies, smaller Kino Flos and 750-watt lamps in these small spaces. "I'll use a 5K or 10K for a larger area, or to get effects on walls or through windows, but otherwise, we're working with pretty small lights on *Oz*," he explains. (It's also somewhat unusual that the number of windows on the set makes gelling somewhat impractical. A standby painter devised a paint mix approximating an 85

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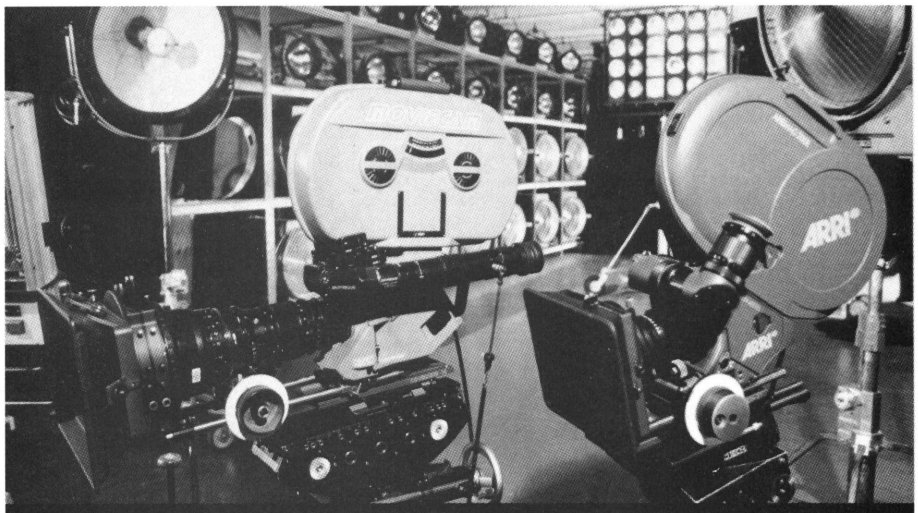

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gel and covered the panes with this gloss to correct daylight for tungsten stock.)

Locating adequate room for fixtures is not the only restriction imposed by *Oz*'s production space. Most action occurs *within* the prison's walls, so every inch of the set has been photographed numerous times. In the current season's first episode, a scene set in solitary confinement taxed the limitations of DiBona's ingenuity. Within his tiny, darkened enclosure, a mentally ill inmate endures the agony of his isolated incarceration and debilitating disorder. "For that scene, I tried to provide every angle that was possible — from lying down on the floor with the camera to having the actor lie down with his legs up against the wall as the camera looked down at him," DiBona explains. "There wasn't a lot of room in there, and the walls couldn't be moved. If I come back for another season, I'm hoping they'll take my suggestion to hinge a lot of the key walls to give the camera more options without the time and expense of having to pull sets apart."

DiBona only removes the camera from its dolly during walking-and-talking scenes, which usually occur within the set's single long hallway. To complement the corridor's built-in overhead lamps, the cameraman aims sidelight through some of the set's windows and also places a backlight against a wall toward the end of the hallway. "When the actors are under an overhead source, they've got light. When they're not being highlighted from above, I've got the light at the end of the hall separating them from the background and a little fill from the window lights. There's always a little edge light, as well as some sources on the back wall, to ensure that they don't go into total darkness." DiBona feels that this approach is a much better solution than walking ahead of the actors with lights. "To have the actors in the same light all the way down the hall would be boring and unrealistic," he maintains.

In terms of ambiance, the cameraman constantly treads a fine line between overemphasizing the show's harsh look and creating an overly attractive, overlit image. "Prison is all

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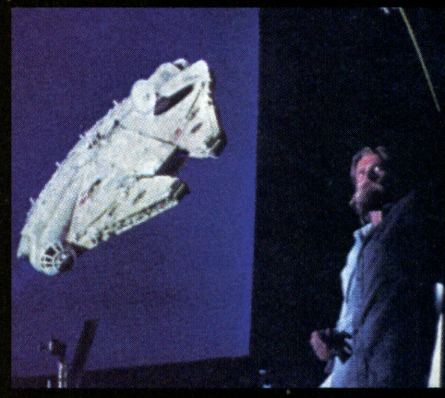
STAR WARS: John Dykstra, ASC's detailed report on the miniature and mechanical effects, revealing the step-by-step approach used to create thrilling space battles. Also, a complete account of the film's composite and optical photographic effects, by Robert Blalack

THE EMPIRE STRIKES BACK: Richard Edlund, ASC writes about setting up Industrial Light & Magic and the special visual effects. Dennis Muren, ASC is questioned about the film's effects photography, and Peter Suschitzky, BSC discusses his lighting and camerawork.

RETURN OF THE JEDI: Cameraman Alan Hume, BSC writes about his work at Shepperton Studios, while James Glennon, ASC vividly describes the location work done in the United States. Also covered are matte painting effects, effects art direction, and Phil Tippett's creature designs.



The archives of American Cinematographer have been opened to reveal the photographic and visual effects methods used to create Star Wars, The Empire Strikes Back and Return of the Jedi. A total of 27 individual stories and hundreds of rare images detail how these classic films were made. Also featured is coverage of the techniques used to restore and update these films for their respective 1997 Special Edition releases.

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about hard light coming from above. It has to be harsh without going *too* far," DiBona says. "You definitely don't want to play it safe and just get a wash from a bounce light for a good exposure because you're afraid of the image going into black. Gordon Willis always emphasized that the frame's black areas are just as important as the lit areas."

Wide shots of Emerald City are illuminated via color-corrected, recessed fluorescent fixtures. Half of these are fitted with honeycomb diffusing panels so they won't read as lights in most shots. Other fluorescent practicals are fitted with grids to direct their light into strong shafts that don't spill off onto the walls. Most unseen bay lights are also skirted to control spillage. DiBona regularly adds a small amount of fill to keep the omnipresent overhead lights from shadowing the actors' eye sockets.

For his A-camera, an Aaton XTR Prod, DiBona sought contrasty optics that would lend images a severe look. The cameraman is somewhat reluctant to identify his primary zoom, however. He explains, "A lot of directors of photography might read which lens I use and say, 'I'd never use that piece of junk!' I'm not one of those guys, however, who says, 'I only use Zeiss lenses.' Having the absolute best lens is not important to the way I work. What I'm after is getting the right look.

"Gordon Willis normally uses a 40mm lens because, for him, it approximates human vision. You get deep focus and it feels as if you're actually standing there watching the scene. On the films we shot together, we used a couple of older Panavision 40mm lenses. They really worked for us, and the color matched beautifully along the entire range."

DiBona's experience as an operator on A-level features with top cinematographers (his recent credits include *You've Got Mail* with John A. Lindley, ASC and *Meet Joe Black* with Emmanuel Lubezki, ASC) has left him with a disdain for easy solutions. "It amazes me how many guys play it safe by lighting every inch of the set. The actor moves right next to a practical lamp and is in the same light value as when he was over in a corner of the room. There's no texture at all.

"Cinematographers who come up from music videos often get nervous as soon as they get their first feature. The first time a studio executive says, 'It's a little dark over there,' they pump light in everywhere. Then the executives don't like it when they see it on film, so the director of photography still gets blamed! You can't get spooked by that type of thing. You should live and die by your own convictions about what a scene should look like."

Classic Films Tour Across the U.S.

The Library of Congress has announced that the cable network American Movie Classics has agreed to

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resume sponsorship of the Library's Film Preservation Tour, which brings National Film Registry titles to theatrical audiences around the country, thus helping to direct the public's attention to the need to preserve America's film heritage. AMC's gift will allow the Library to complete its goal of bringing the tour to all 50 states. The tour began in 1995 and has already visited 28 states.

Librarian of Congress James H. Billington noted, "Film is a powerful force in American culture and national life. Motion pictures, whether feature films, newsreels or avant-garde works, are both an art form and a record of our times. Our challenge is to protect and preserve those films in versions that are as close to the originals as possible. The tour presents a marvelous opportunity for many Americans to enjoy classic films on the large screen for which they were made."

The tour began in July 23 at the Capitol Center in Charleston, West Virginia. On August 27 it will be in Albuquerque, New Mexico. For a complete list of future tour stops, visit the Library's web site at www.loc.gov/film/tour.html, or call (202) 707-1671.

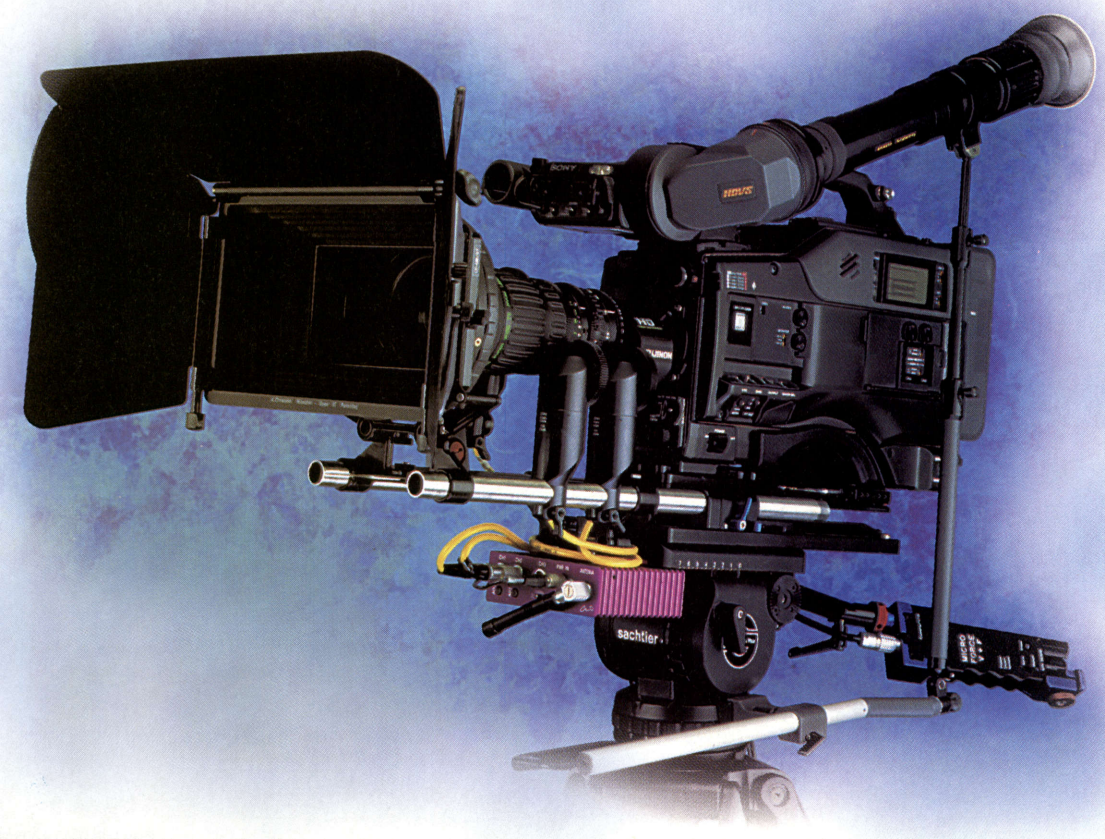
Entries Sought by International Children's Film Fest

The New York International Children's Film Festival is seeking submissions for their third annual event, which will be held from February 6-13, 2000, in Manhattan. The NYICFF is seeking creative, intelligent, entertaining film and video titles that will appeal to children between the ages 3-16. The Fest will consider difficult or controversial subject matter, and accepts features, animation, documentary, shorts, narrative and experimental projects in all budget ranges. To qualify, works must be completed no later than July 1, 1997. Foreign language films must be dubbed or subtitled in English. Student and child-produced works are welcomed.

The NYICFF plans to present 50 films in competition, plus retrospectives, production workshops, filmmaker Q&As, and an awards ceremony. Fest winners are selected by the attendees. Sponsors include MGM, HBO, Nickelodeon, and the *New York Times*.

Earlier this year, the NYICFF was given a generous grant by AMPAS — making it the only festival of its kind to receive support from the Academy.

The entry deadline is October 1, 1999. To receive an entry form, contact the NYICFF by mail at 532 La Guardia Pl. #329, New York, New York 10012, by fax at (212) 674-5692, or by e-mail at ebeinc@inch.com. You may also visit their website at www.gkids.com. ■



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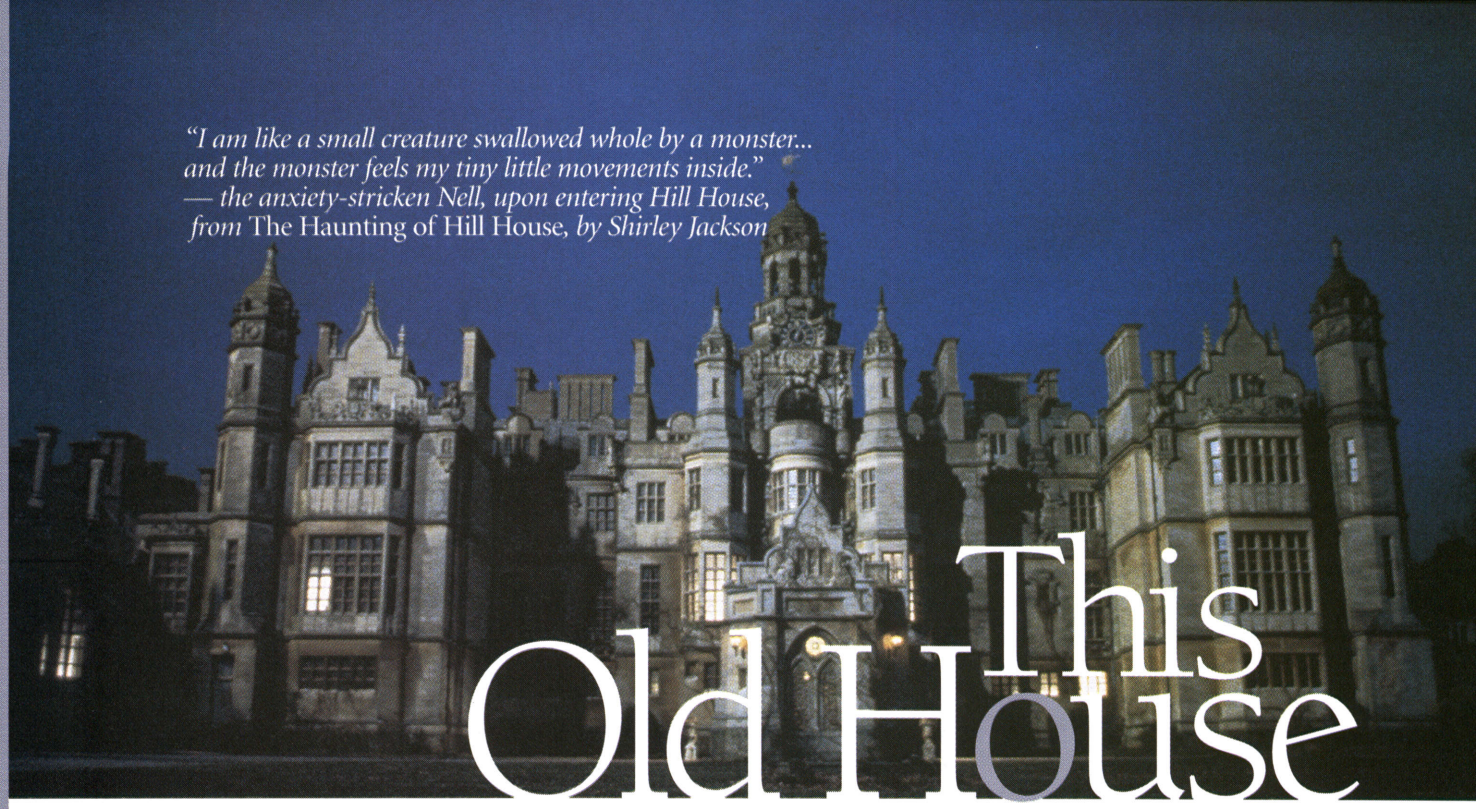


"I am like a small creature swallowed whole by a monster... and the monster feels my tiny little movements inside."
— the anxiety-stricken Nell, upon entering Hill House, from The Haunting of Hill House, *by Shirley Jackson*

This Old House

Director Jan De Bont, ASC and cinematographer Karl Walter Lindenlaub, ASC, BVK blow the roof off *The Haunting.*

by David E. Williams

Unit photography by Frank Masi

Ghostly tales have long been a favorite subject for cinematographers, given the obvious opportunities for inventive lighting and camerawork. Shirley Jackson's 1959 novella *The Haunting of Hill House* was first adapted for the 1963 film *The Haunting.* Directed by Robert Wise and shot by Davis Boulton, BSC, it still stands as one of the finest examples of fright cinema (see historical article beginning on page 82). However, today's filmmakers couldn't resist revisiting Jackson's original tale in order to seriously spook modern moviegoers.

This new incarnation centers on Dr. Jeffrey Marrow (Liam Neeson), who seeks to prove the existence of ghosts by selecting Hill House, an eerie New England mansion with a lurid history, for a unique experiment. His unwitting subjects are Luke (Owen Wilson), Theo (Catherine Zeta-Jones) and Nell (Lili Taylor), who falsely believe that they'll be participating in an insomnia study. Each is soon affected by the demonic dwelling's anthropomorphic aura of evil, personified by its former master, the long-dead Hugh Crain (Charles Gunning).

Director Jan De Bont, ASC — the ace cinematographer who broke into directing with the kinetic thrillers *Speed* and *Twister* — stresses that his new *Haunting* is not a remake of Wise's 1963 film. "There were many things they could not do at the time for technical reasons," De Bont explains. "That prompted the filmmakers to take a more 'suggestive' approach, in that the ghosts were never seen, but heard. The use of sound and suspense in that film is excellent, but we wanted to work more closely with Shirley Jackson's story, which is more graphic. While we are still leaving many things up to the audience's imagination, we are also suggesting things more specifically by depicting certain details."

Supernatural Shooting Style

Filming began in November of 1998 at the Raleigh Studios complex in Manhattan Beach, California, and then moved to a continuous series of enormous Hill House interiors built within the cavernous "Spruce Goose" domed hangar in Long Beach. Finally, exterior work depicting the mansion and its grounds was done at Belvoir Castle and Harlaxton Manor in England.

Caleb Deschanel, ASC was the film's original director of photography, but he and De Bont decided to part ways after the first week of shooting. Deschanel went on to shoot the period drama *Anna and the King* on location in Thailand, and Karl Walter Lindenlaub, ASC, BVK took his place on *The Haunting.* Lindenlaub recounts, "After getting the initial call on a Sunday, I immediately went in to meet with Jan, look at the footage Caleb had shot, and inspect the sets. I began shooting the following Tuesday."

Given virtually no prep time,

Photos courtesy of DreamWorks, SKG.

Lindenlaub relied on his previous experiences in lighting large sets — on such films as *Stargate* and *Independence Day* (see *AC* July 1996) — to plan a strategy for the vast, ornate Hill House interiors, which were devised by production designer Eugenio Zanetti (*What Dreams May Come*). Lindenlaub, a native of Hamburg, Germany, has also shot the features *Universal Soldier*, *Last of the Dogmen*, *Up Close and Personal* (*AC* April '96), *Rob Roy*, *The Jackal* and *Red Corner*.

After signing on for *The Haunting*, Lindenlaub brought in gaffer Dino Parks, rigging gaffer Brian Lukas and key grip Loren Corl. However, several members of the original crew stayed with the production. The cameraman reports, "Caleb's gaffer and key grip overlapped for a few weeks to help us get going, which I thought was very noble. I also inherited the A-camera/Steadicam operator, Scott Sakamoto, and the first assistant, Jamie Barber — which was wonderful, because they were supportive and gave me a good start in building a dialogue with Jan."

Though both the old and new versions of *The Haunting* were shot in Panavision anamorphic, De Bont's update bears little photographic resemblance to its predecessor. Asked if he discussed the 1963 film with De Bont, Lindenlaub recalls, "Jan thought it had aged a bit in terms of the visual look, and therefore would not be such a great reference. Also, because this new film is not a remake, we both wanted it to be different in terms of the lighting and camerawork."

The filmmakers did draw inspiration from another ghostly classic of the same era: *The Innocents* (1961), which was shot by Freddie Francis, BSC. Lindenlaub offers, "It was beautifully photographed in black-and-white anamorphic, and has amazing depth of field. They lit everything very hard, shooting at T11, so they didn't often have to use diopters. We couldn't do that today, because of the way we use soft light.

Opposite: The brooding visage of Hill House was depicted with exterior work done at Belvior Castle and Harlaxton Manor in England. Left top: Nell (Lily Taylor and Theo (Catherine Zeta-Jones) are targeted by the ghost of Hugh Crain. Bottom left: Director Jan De Bont (right) plots a shot with cameraman Walter Lindenlaub.

"I later spoke to Freddie Francis's operator on that film, Ronnie Taylor [BSC], who was our B-camera operator when we shot our exteriors in England. He explained how Freddie had used graduated filters on both sides of the frame to keep the walls dark, and how the actors even wore sunglasses between takes!

"Like the original *Haunting*, what's great about *The Innocents* is that there are so many things we don't see, perhaps because they are happening only in a character's mind, which creates suspense. However, it has a more classical photographic style, so it hasn't dated in the same way."

With little time to plan his lighting scheme, Lindenlaub instinctively determined that the film needed a naturalistic approach in order to make its fantastic story seem more believable. He explains, "The Hill House sets were very baroque and operatic, so having young contemporary characters walking though them was already such a strong, dramatic starting point that we didn't need expressionistic lighting. There are no thunderstorm or lightning effects in the film either. It's not Disneyland's Haunted Mansion."

Shadows and darkness were definitely going to be key components in the film's visual plan, but strong daylight sources were also important in order to create emotional contrast in certain scenes. "We didn't want the audience to feel as if they had been sucked into two hours of darkness," Lindenlaub remarks. "Psychologically, people don't like to be in the dark, and 120 minutes of darkness can become depressing to watch. Also, the impact of any extreme lighting effect will wear off after a certain point. For example, if an entire film is shot with green-tinted lighting, the effect may seem imposing at first, but the eye will adapt, and after a while the audience won't even see the green anymore. The same thing happens with light and dark. If there is no alternation between light and dark, there is no relief, so the dramatic tension of being in the dark is gone."

This Old House

Lindenlaub's lighting approach was greatly impacted by De Bont's shooting style. "When setting up a shot, Jan always starts with the camera," the cinematographer details. "Unlike some other directors, Jan likes to work by looking through the eyepiece and seeing the shot. He totally believes in the dynamic of camera movement and the setup; he feels that those elements are more important than 'perfect' lighting. But Jan knows what's practical, and he doesn't start with abstract ideas that cannot be achieved. If he wants a particular shot, he will get that shot, no matter what it takes."

Lindenlaub says that operator Scott Sakamoto helped make this approach work: "Scott is a great operator because he's patient and willing to try things, and Jan also has a lot of respect for Scott."

De Bont prefers to work with stand-ins while he is setting up shots so he can completely develop his ideas about the angles and blocking through the camera before bringing in the actors. Lindenlaub says, "Because of that, it was better to let Jan decide which lens and camera setup he'd like to use for any given shot, although we had some different ideas about lens selection. For example, he likes using wide-angles for close-ups, while I prefer a longer lens. That's just my personal preference, though; a lot of cinematographers use wide lenses to great effect.

"Because Jan had such a clear idea of what he wanted, we didn't have the type of vacuum that normally exists between the director and the camera department. The cinematographer usually fills that gap, but given Jan's background, it didn't exist on this picture. I didn't have to help him in terms of visualizing the film, and Scott was there to help Jan achieve what he wanted with the camera, so I could concentrate on the lighting.

"That usually isn't the best way to shoot a movie, because the cinematographer should first be involved with the camera placement and then determine the lighting from there. There was certainly no point in arguing with Jan all the time, but he also chose a lot of angles that were different from what I would have selected. Of course, this movie allowed for strange angles and lens choices. The most 'obvious' choices were not always the right ones, so I was happy to do things a bit differently than I ordinarily might have. It resulted in a lot of interesting setups, some of which violated a lot of the 'rules' I grew up with. But again, if the photography gives the audience an added sense of uneasiness, I think that will help the story."

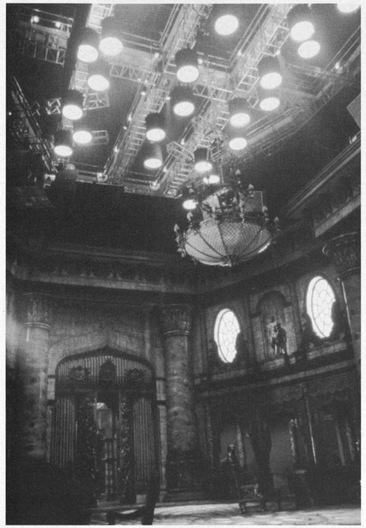
While few directors still approach coverage with the traditional Hollywood master-shot method, "Jan doesn't shoot overlapping action at all, except for static dialogue scenes, and there are only two or three of those in the film," Lindenlaub explains. "Also, we would rarely do matching setups or cross coverage — Jan thinks that's boring. Basically, we were shooting exactly the way most people try to avoid shooting! For instance, if an actor was to move from point A to point B, we would cut the action into 10 shots, and they would hardly overlap except at the cutting point. Shooting like that was difficult for the actors, and for me as well, because I had to maintain continuity in the lighting over those 10 setups. But Jan was happy working like that. He reasoned, 'Why shoot more if I don't need it?'" Lindenlaub adds that a single camera was used for about 80 percent for the shoot, with De Bont calling for a B- or C-camera only for complex scenes involving physical effects or stuntwork.

Another aspect of De Bont's coverage strategy was demonstrated during *AC*'s visit to *The Haunting*'s Long Beach sets last January. In one of the scenes that was being filmed, Nell, Theo and Luke enter Hill House for the first time, and are greeted by Dr. Marrow in the vestibule. The three new arrivals are visibly shaken by the scale and ghoulish decor of the mansion, and Marrow leads them through the grand entry room. Nell lingers behind, transfixed as she stares upward at the ceiling.

The sequence was first covered at eye level, with Scott Sakamoto operating the Steadicam. As the action began to unfold, he preceded and then ran parallel to the actors as they moved through the grand entry hall and past a central fountain. This shot would reflect the film's general, objective point of view.

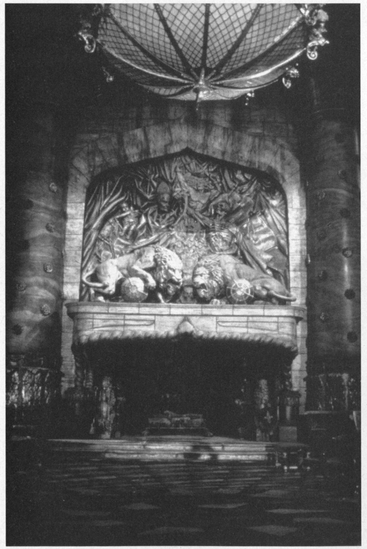
After a few takes, the crew quickly reset and a Lenny Arm 2 Plus mounted with a Hothead II was wheeled into position. While the lighting was adjusted, a new shot was blocked out: a bird's-eye view beginning at about 40' that swooped down through a cluster of practical chandeliers into a close-up on actress Lili Taylor, isolating her from the others. This would represent the film's second distinct POV, that of Hill House and the twisted soul of Hugh Crain. "This is the first film I've done in which such high-angle shots are used to good effect," Lindenlaub attests. "Other directors have suggested them, but there was never a reason to do such shots, because they can actually take the audience out of the story by being so subjective. In this case, Hill House is a major character, and it watches the other characters very closely as they get lost in its maze of rooms. Cutting to that second point of view helps remind the audience that there is danger always looming over everything. These shots were generally done with a crane and a wide lens, usually a 35mm, which distorted things correctly and emphasized camera movement if there was any."

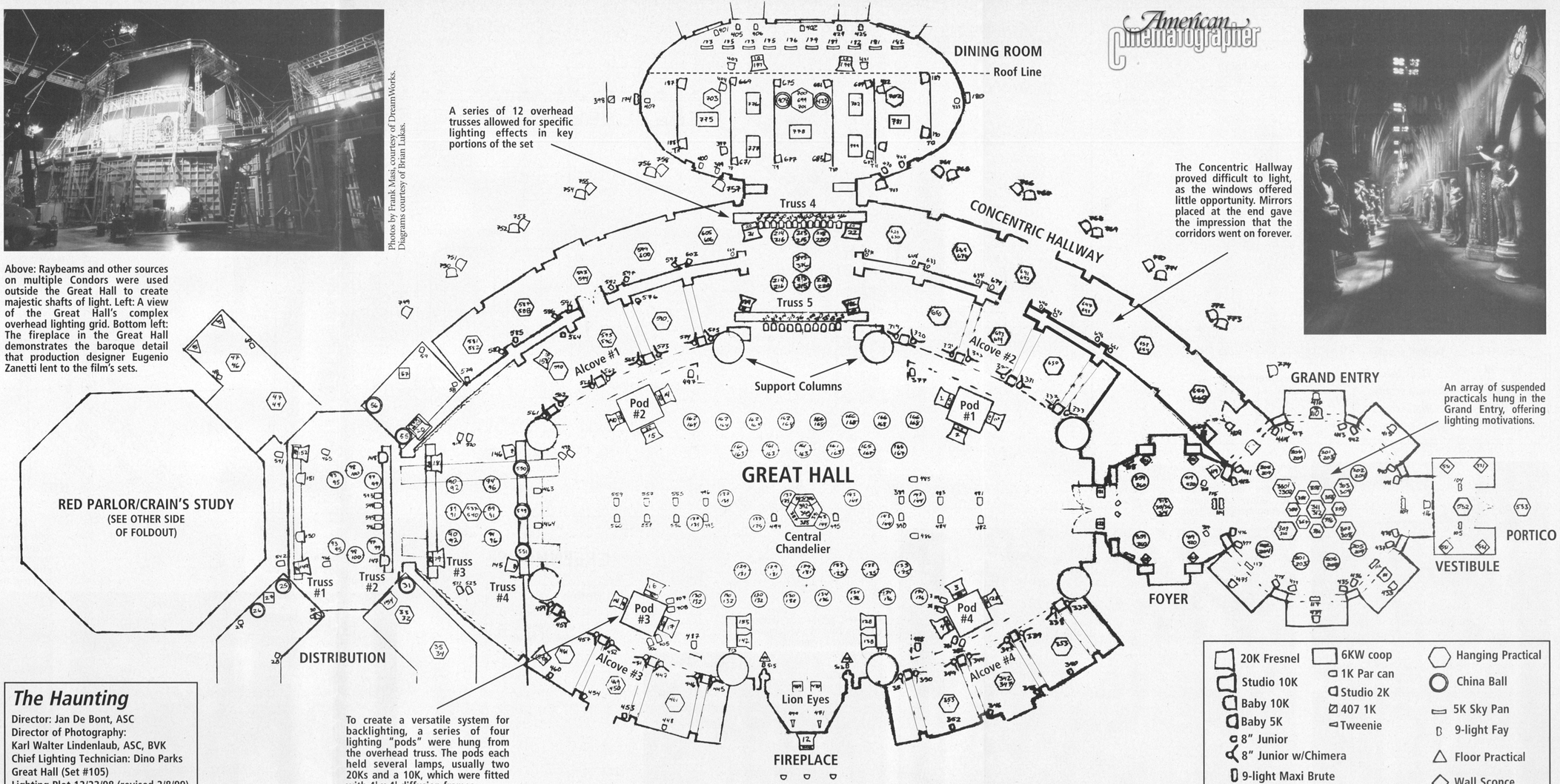
While these shooting tactics might lead some cinematographers to use an overall, "environmental" approach to lighting their sets, this



Photos by Frank Masi, courtesy of DreamWorks.
Diagrams courtesy of Brian Lukas.

Above: Raybeams and other sources on multiple Condors were used outside the Great Hall to create majestic shafts of light. Left: A view of the Great Hall's complex overhead lighting grid. Bottom left: The fireplace in the Great Hall demonstrates the baroque detail that production designer Eugenio Zanetti lent to the film's sets.





The Haunting

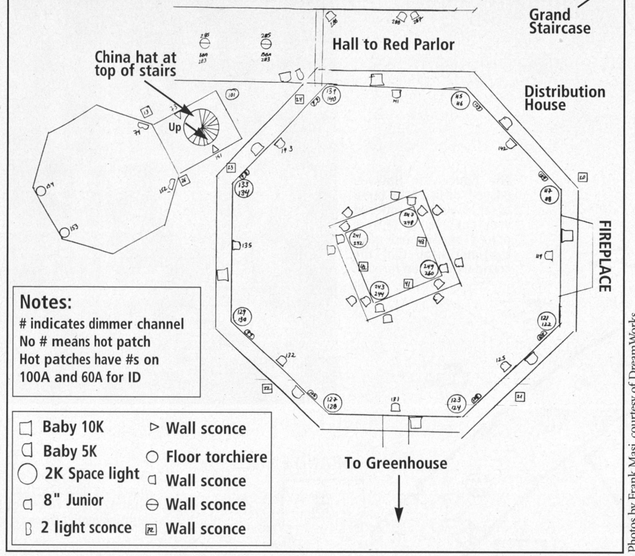
Director: Jan De Bont, ASC
Director of Photography:
Karl Walter Lindenlaub, ASC, BVK
Chief Lighting Technician: Dino Parks
Great Hall (Set #105)
Lighting Plot 12/23/98 (revised 2/8/99)
Drawn by: Brian Lukas

American Cinematographer

The Haunting

Director: Jan De Bont, ASC
Director of Photography: Karl Walter Lindenlaub, ASC, BVK
Chief Lighting Technician: Dino Parks
Greenhouse Lighting Plot 2/8/99
Drawn by: Brian Lukas

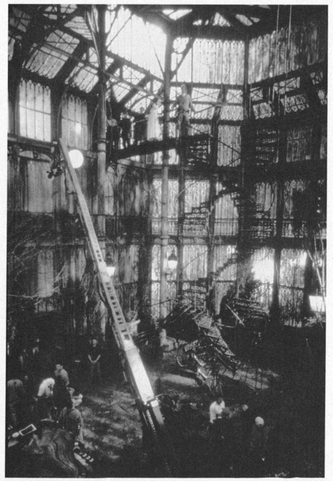
RED PARLOR/CRAIN'S STUDY

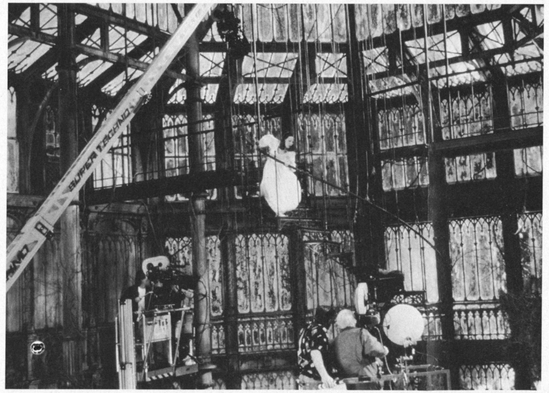


Notes:
# indicates dimmer channel
No # means hot patch
Hot patches have #s on 100A and 60A for ID

- Baby 10K
- Baby 5K
- 2K Space light
- 8" Junior
- 2 light sconce
- Wall sconce
- Floor torchiere
- Wall sconce
- Wall sconce
- Wall sconce

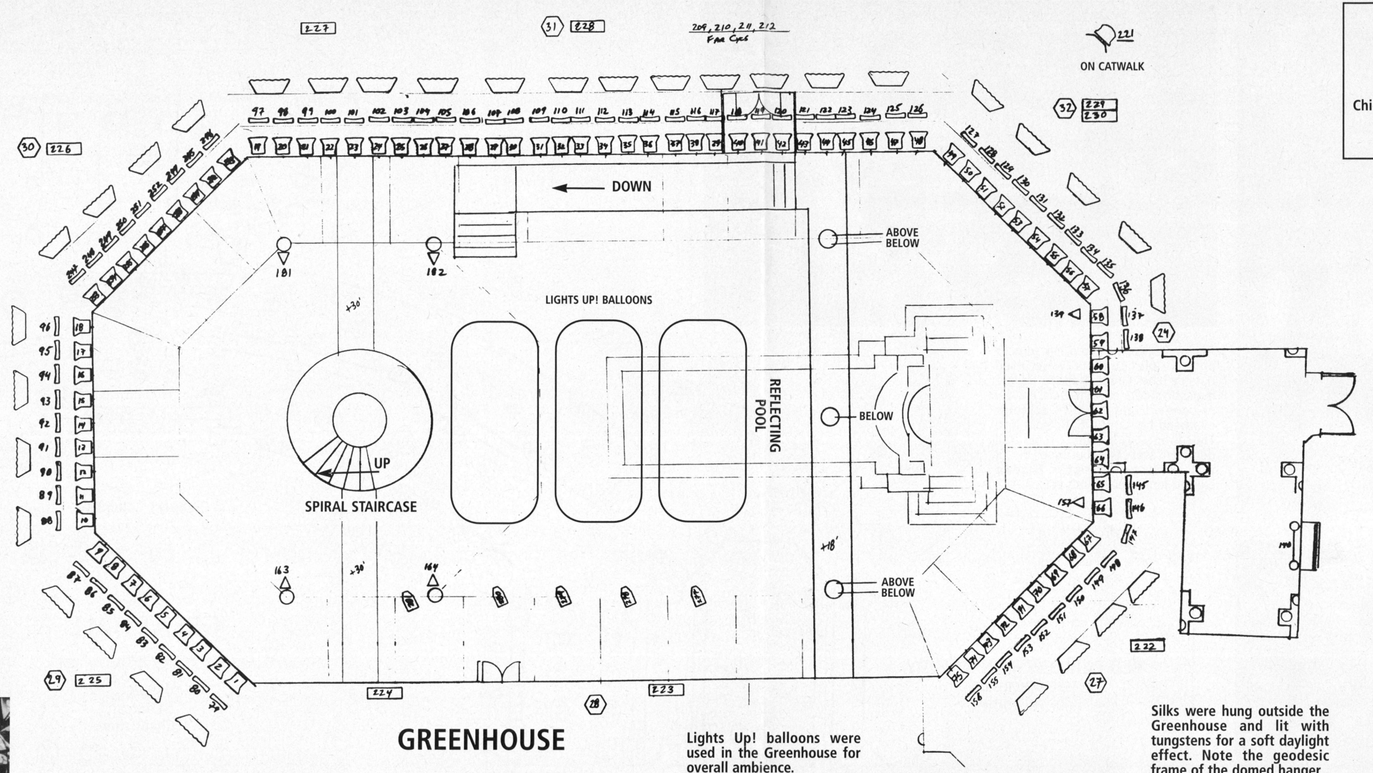
Photos by Frank Masi, courtesy of DreamWorks.
Diagrams and photos courtesy of Brian Lukas.





Left: Shooting on the spiral staircase in the Greenhouse with the Technocrane. Note the China ball on the camera for fill. Below: A three-camera setup covering actress Lili Taylor.

From left, production designer Eugenio Zanetti and cameraman Karl Walter Lindenlaub.

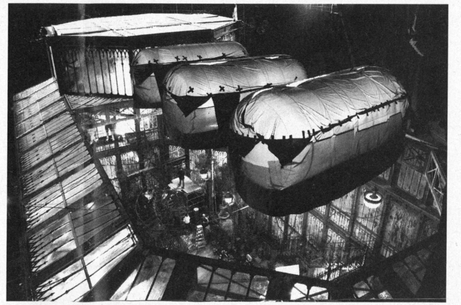


GREENHOUSE

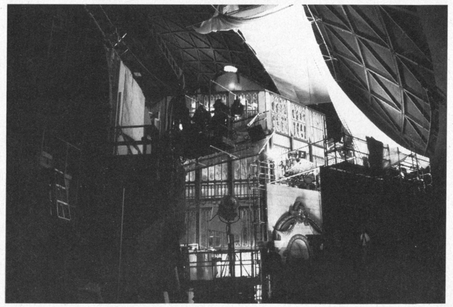
Notes:
1) Far cycs on floor
2) 2K nook lights @ 18'
3) 2K blondes @ 30'

- Baby 10K
- 2K Blonde
- 2K nook light
- 4 x 1400w far cyc
- Soca w/ open cir
- spare 100a dim
- Chandelier w/ETC
- 2-lite wall sconce
- Wall sconce w/ETC
- Par can MFL

Lights Up! balloons were used in the Greenhouse for overall ambience.



Silks were hung outside the Greenhouse and lit with tungstens for a soft daylight effect. Note the geodesic frame of the domed hanger.



idea did not appeal to Lindenlaub, who states, "I'm not a believer in lighting a room and then letting the actors walk into it. That doesn't work, especially if you're doing close-up photography. However, I did sometimes have to do that. Our crane shots were always compromises, and we had many of them. If we began with a 35mm anamorphic lens and then craned down into a medium close-up, there was just no way to have the lights close enough to the actor to be very cosmetic.

"My general lighting approach for the entire film was to be relatively soft on the front of the faces, and then use backlight to give things shape and direction. That method helped quite a bit, given what we were doing with the camera. It would have been interesting to try more dramatic techniques with the lighting — using higher, more frontal lighting and cutting more — but we didn't have the time to do it. Jan wanted between 18 and 20 setups a day, with one camera, while constantly switching between Steadicam, cranes, normal 35mm cameras on dollies, and VistaVision for effects work. With that many setups, we had about 20 minutes to light each shot, so we ended up doing much more pre-rigging than I normally would."

Lindenlaub worked to create emotional contrasts in the film by alternating strong daylit interiors (left) with fright-inducing nighttime lighting (below). He reasoned that without relief, the film's sense of darkness might become repetitious and lose its power to chill the audience.

Phantasmagorical Quarters

Due to space limitations in Long Beach, sets depicting Nell's dingy apartment, her opulent Hill House bedroom, and a bathroom adjoining Theo's quarters were constructed at Raleigh Studios. Since the shoot began at Raleigh, the show's construction and rigging crews, headed up by rigging gaffer Brian Lukas, had seven weeks of 'round-the-clock work time on the larger sets in the dome before the production would arrive there.

The film's visual effects requirements, overseen by Phil Tippett (see story beginning on page 44), also benefitted from this schedule. Many of the film's most complex shots depict ghostly action taking place in Nell's bedroom, and given the production's tight post schedule, shooting these sequences first gave Tippett and his team a head start.

In describing Nell's bedroom, Lindenlaub says, "One of the most unusual aspects of all of our sets was that every room was circular, usually octagonal, which created some tough lighting situations. I first experienced that type of thing when I lit the Oval Office scenes for *Independence Day*. It's hard to cut things properly because the light falls differently on curved wall surfaces."

Gaffer Dino Parks, who first met Lindenlaub in 1989 when the cameraman was in the U.S. to shoot footage for the sci-fi film *Moon 44*, and worked with him years later on *Red Corner*, remarks, "Our first day in Nell's bedroom was mainly spent problem-solving and finding positions to shoot from. The space had these eight curved palmetto sculptural elements built into its joints, rising to very small ceiling spaces between them. The doors were normal-sized, but small considering the size of the room itself. It was like lighting the inside of a sphere."

The room's windows offered the only logical lighting source, but "they were placed in a way that we couldn't light the bed with sidelight," Lindenlaub says. "Also, because of the requirements of the effects crew, the

This Old House

The large oval windows in the Great Hall offered a tremendous opportunity to dramatically illuminate the space for both daylight and nighttime looks. A light layer of smoke helped carry the beams, which were about a stop over key.

bed's headboard was positioned too far into the room to bring in any light at a right angle. That meant we had to do a lot of cheating — more than I would have liked."

For daylight scenes, Parks increased the output from the windows by using multiple sources — 20Ks, Dinos and Maxi Brutes — coming in from slightly different angles to broaden the light's spread in the room and pinpoint certain areas. "Unfortunately, that meant the shadows fell differently than they would have if the light had been single-sourced and positioned further away," Lindenlaub says. "The moonlight effects were especially difficult; those shots required us to hang lights inside the set, much closer than they should have been."

Because of the picture's visual effects requirements, VistaVision cameras were used extensively on this set, and throughout the rest of the film. "The trend now is to use VistaVision for better negative quality, although for a while it seemed that 4-perf was good enough," Lindenlaub confirms. He adds that an additional benefit of using the 8-perf/35mm format for effects work was that he could continue shooting with his primary stock on the show, Kodak's Vision 500T 5279, instead of switching to a slower, finer-grain stock (although Vision 200T 5274 was used for the film's few exteriors). Lindenlaub recounts, "Using VistaVision was more cumbersome, but we had two good camera bodies that were flexible — one for Steadicam and a studio model."

Both VistaVision units were retrofitted with remote follow-focus rigs, and Lindenlaub reports, "The effects people were concerned about the camera movement, and after each shot we had an army of people come in to measure everything, do light passes with an 18-percent gray ball as a reference, and then do passes with a convex mirror, which allowed them to see where all of the lights were. They just got a few frames of each setup, and although the process was complicated, it didn't take long.

"My main concern about using VistaVision was that we had to use Nikon lenses, which I wasn't happy about. Unfortunately, tests were already done and the decision to use them had already been made, so there was no choice. Personally, I don't see the point of going to the trouble of shooting in VistaVision if you're going to use a consumer-grade Nikon lens. The lens calibration was a joke. The difference between a T2 and a T2.8 on these lenses is very *unspecific* when compared to what you get with motion picture lenses, which are very accurate. There is a VistaVision system that is set up for Leica lenses, and I would have preferred that; however, the resulting footage does look great. You can't tell the difference between the original VistaVision footage and the digitized and then filmed-out reduction prints, so our effects shots can be successfully intercut with our standard footage. The effects work looks great partially because Phil Tippett not only has technical ability, but also a strong artistic sensibility."

Lighting for Darkness

Dailies and prints for *The Haunting* were handled by Technicolor, and like some other cinematographers who have now used Vision negative and print stocks in combination, Lindenlaub found that their increased contrast

on the edge of the millennium

some things are still made by hand

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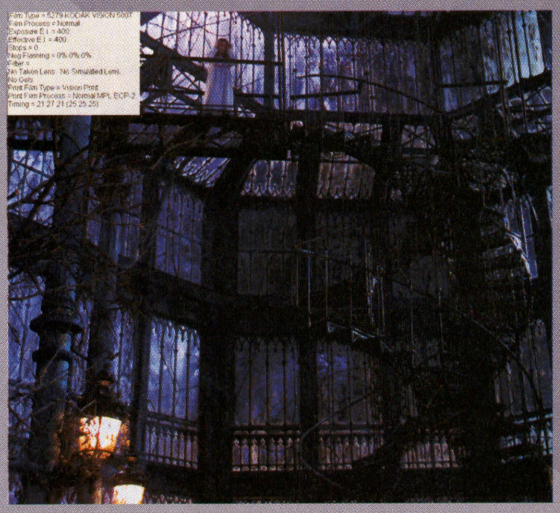


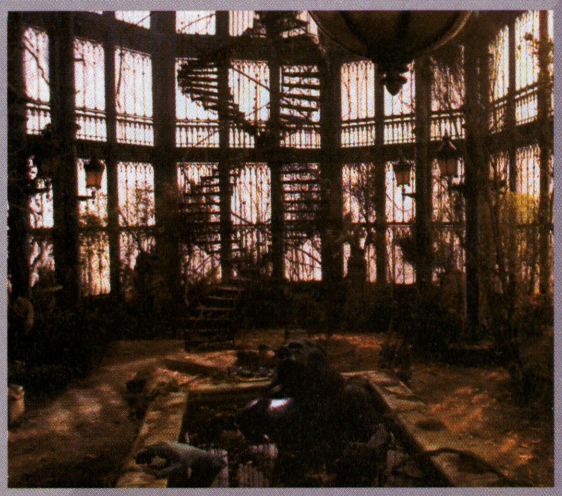
INSTANT IMAGES

Kodak's PreView System helps filmmakers haunt Hill House.

Above and below: Two different looks for the Greenhouse set, as seen on actual printouts made with Kodak's PreView System.

During *The Haunting*'s rigorous shooting schedule, director of photography Karl Walter Lindenlaub averaged 18 to 20 setups per day, and was often required to shoot matching elements for scenes sometimes filmed weeks apart. Aiding him in this effort was a new tool, the Kodak PreView System, which is available through Panavision.

The PreView System consists of a Kodak 520 digital still camera, a laptop computer, and software that can emulate different Kodak stocks, as well as filters, lenses, T-stops, lab processes and timing lights. These bits of information allow a cinematographer to immediately test various looks while on the set. The resulting images can be viewed on a color monitor or output as high-quality 8" x 12" thermal color prints.



The PreView System was primarily conceived as a tool to be implemented during location scouting or costume and makeup tests. In using it, cinematographers could experiment with different looks without exposing a frame of film. On *The Haunting*, however, continuity was a key concern for Lindenlaub. He offers, "I was pretty excited when I first saw this system, because I've used black-and-white Polaroids for continuity, which is a pretty abstract way to create records of color scenes. I asked Panavision if this system was ready when I came onto *The Haunting* — I thought it would be a lot more accurate."

Lindenlaub had already decided to exploit Kodak's Vision 500T 5279 for his interiors — which accounted for about 85 percent of the film — and Kodak's Vision 200T 5274 for his location work. He also knew that *The Haunting* would be released on Vision print stock. "You have to light a little differently with the new print film," he says. "There is a whole different world of blacks out there. I found myself using more fill light and using my meter in situations where I used to rely on my eye."

Lindenlaub assigned the PreView System to Tony Schultz, a former Panavision technician whose primary responsibility was setting up the hothead. Schultz also drew lighting diagrams that Lindenlaub used as an additional reference for continuity.

When Lindenlaub wanted a still image, he'd simply tell Schultz, "Tony, a Kodak moment." Within five minutes, Schultz would hand him a print. "It was instant feedback," Lindenlaub says. "I could show the picture to [director] Jan De Bont and ask, 'What do you think?' It was better than asking that question during dailies; we could avoid having to reshoot a scene later."

In terms of maintaining continuity, the color prints provided more objective information than looking at Polaroids and reading notes. Along with ascertaining the light's falling patterns, Lindenlaub could see colors, shadows and contrast. He could also perceive the angle of photography and reconstruct shots down to the subtlest details. "Every frame had to feel realistic, yet at times we heightened reality to make a scene more spooky and frightening," the cinematographer says. "It goes beyond the usual logic applied in lighting — you have to trust your instincts. In some scenes, strong sunlight pours through a window, but you don't want the audience squinting for too long, so you control the mood with fill. Or maybe one side of an actress's face is brightly lit and the other half is in dark shadows. In those types of settings, you need to rely on more than just your memory and a Polaroid." Indeed, a small shade of difference in shadow density or highlight brightness can send the audience a powerful, subliminal message that the scene is 'off.'"

The cinematographer believes that Kodak's PreView System could have even broader applications. Different departments, including makeup and wardrobe, may someday share a database for storing continuity images. In addition to image files, an audio function can enhance communication between cinematographers and colorists. Lindenlaub envisions shooting at a remote location and using such a system to send various pieces of information via the Internet. With the introduction of any new tool, early adopters like Lindenlaub are going to push the boundaries and employ it in ways that have yet to be imagined.

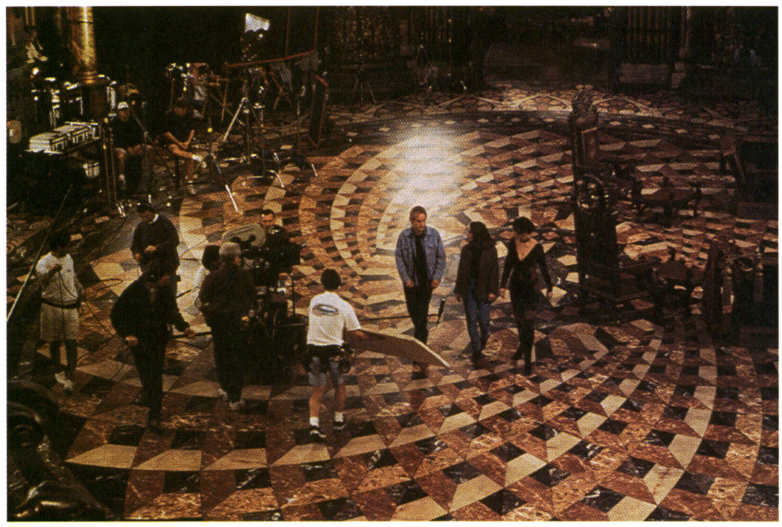
— Bob Fisher

compelled him to rethink his lighting methods. "The 79 is more contrasty than [EXR] 5298 was — with the newer stock, the blacks fill up and grain disappears, but latitude disappears as well," he details, noting that *The Haunting* was his first opportunity to use the 500 ASA stock. "To my surprise, the Vision print stocks became the only option for release prints after April [of this year]. Between that factor and our dark sets, I had to reevaluate all of my lighting ratios, especially for moonlight effects — and those were methods that I had been using for 20 years!

"For moonlight, I would normally go two stops under on the faces, and the backlight would be the moonlight at key. On this film, though, two stops under was almost too dark, because everything just under that would drop to black. With 98, you would have had a stop or so left, and you'd get some shadow detail, but that's not the case now unless you use more fill. The amount of fill determines the look of the movie much more than any other factor, but on this picture I was adding a lot more fill than my eye was used to seeing, which meant that I had to depend on my meter much more. My exposures had to be precise as well, because the 79 doesn't handle under- or overexposure very well — it gets too milky. Grain isn't a problem, but milky blacks look wrong to me."

Asked if using other stocks were an option, Lindenlaub replies, "No, we needed the speed because of our big sets, but because we were using so much smoke in the film, the grain in 5298 would be too apparent. Before this, I'd used the Vision 5277 320T, which has much lower contrast, but I overexposed it to get good blacks. I liked it because it took the contrast out of faces and was more flattering, but it was too slow. I also looked at Vision 800T 5289, but I wasn't too happy with the grain. The 89 would be a great stock for a

This Old House



Shooting in the Great Hall offered plenty of level surface area for dolly and crane work, but despite the huge fixtures employed to light the set, such simple tools as Chinese lanterns and bounce cards (right) were vital in order to add a touch of fill when needed. In the film's finalé, the huge fireplace belches up the bones and ashes of Hill House's many victims (below), motivating a heavier use of smoke.

gritty big-city thriller, but not for *The Haunting*.

"I know that some people's use of lab processes like ENR to get better blacks prompted Kodak to add contrast to their stocks, but not everybody wants it. If I ever wanted more contrast, I could do it with my lighting. Now, lighting for 79 — in combination with the Vision print stocks — is like lighting 5247 or 45 in the studio, and it will take time to get used to that. Of course, the blacks we got with 79 were great for the atmosphere of our film, since it's a dark movie."

The Heart of Hill House

The *Haunting* sets built in the Long Beach dome were imposingly huge and oppressively Gothic. None was more impressive than the Great Hall, which ran about 225' from the front door to a massive grand staircase at the other end, with eight stone columns towering 50' above an ornately patterned marble floor. Facing the stairs, a gaping fireplace draped with snarling stone lions crouched on the left, while an oblong dining chamber adjoined from the right. Above the staircase was a larger-than-life portrait of the malcontented Hugh Crain staring out across the vast room.

While much ado has recently been made about the use of digital sets, De Bont eschewed this approach for *The Haunting*, although he knew that rendering Hill House's interiors practically — especially the Great Hall — would be expensive. "When I read the script, I knew the actors would have to *feel* the setting," De Bont reasons. "We could not have them walk around on bluescreen stages. The physical contact with the space is so important in how you feel and how they feel. Also, because we built everything in the studio, we had total control and we were able to stay on schedule. My earlier movies were so weather-dependent that I had little control. That's what was so great about the old movies: the filmmakers had so much control and could make the right decisions. Hitchcock, for instance, was a master because he used his sets to the fullest extent."

Building such sets was one thing, but lighting them was another matter, particularly the Great Hall. "When I saw the sets, I almost fainted," Lindenlaub admits. "They were 10 times bigger than I'd imagined, and they were all connected, like practical rooms. Because of Jan's shooting style, I had to cover about 200' of the Great Hall with light and be able to look in any direction at any time. Also, we had to cover the full height of the set, and that meant about 45'. The size of the space called for big units set far away, and lots of ambiance."

Rigging gaffer Brian Lukas, another veteran of *Red Corner*, suggested using TM Motion Picture Equipment Rentals of North Hollywood to obtain the show's immense lighting package. "[Owner] Tommy May and [lighting equipment manager] Tom Allison were extremely helpful and accommodating," Lukas attests. "Since they had to invest in a lot of gear to keep us going, their company has really grown in the last year."

As for power, the city of Long Beach had installed a drop before cinematographer Stephen Goldblatt, ASC began shooting 1997's *Batman and Robin* at the dome, powering two transformers that offered 10,000

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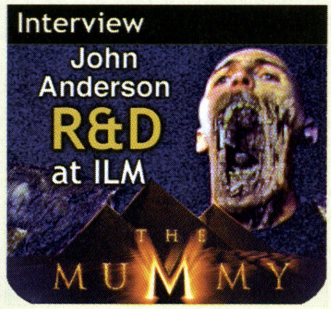
Interview
John Anderson
R&D at ILM
THE MUMMY

Interview
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Visual Effects News

Updated: Tuesday June 15, 1999 at 4:50 PM PDT

Lucas Wins Presidio Bid

Director George Lucas has won the rights to develop a $250 million digital arts center in San Francisco's Presidio. The plan calls for a campus-like setting which will house **Industrial Light & Magic, Lucas Arts, Lucas Learning, THX** and the **George Lucas Educational Foundation**. The facility will accommodate the companies' approximately 2,500 employees, who are expected to move into their new facilities in 2002.

Tue Jun 15, 1999, 4:50 PM PDT

LightWorks 5.0 Ships

LightWork Design is now shipping version 5.0 of its **LightWorks** rendering software. LightWorks component software, designed for direct integration into 3D software applications, provides rendering for photorealistic 3D images and animations. The new release features Interactive Image Regeneration (IIR) technology for instant visual feedback on 3D designs.

Tue Jun 15, 1999, 2:45 PM PDT

Jobs News

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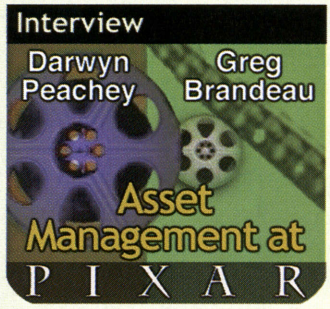
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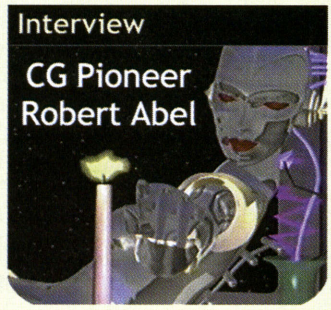
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"Godzilla" Team Wins Saturn Award

"Godzilla" captured the award for best visual effects at the Academy of Science Fiction, Fantasy and Horror Films' 25th annual Saturn Award. The award winning team includes visual effects supervisor Volker Engel, who also won two years ago [illegible] designer and supervisor Patrick Tatopoulos, visual effects supervisor Clay Pinney and associate visual effects supervisor Karen Goulekas. Nominated [illegible] "Mighty Joe [illegible] Ryan," "Dark City" and "Armageddon."

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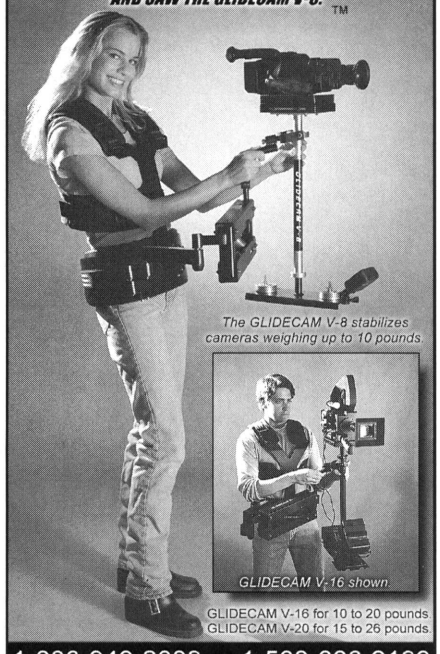

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This Old House

amps of AC. That wasn't enough for *The Haunting*. "We brought in two more 3,000-amp plants," Lukas details, "and then ran massive amounts of 4/O [cabling] to get power all around the set."

An overhead scaffolding and truss system had been built over the Great Hall before Lindenlaub joined *The Haunting*, but the structure needed modifications in order to fulfill his needs. Says Parks, "The lighting that was there was HMI-based, but Walter and I agree that tungstens offer more control, so we pulled most of that out and started from the top. While we shot at Raleigh, Brian Lukas and his crew prepped the sets at the dome and then stayed ahead of the camera."

Because they were using tungstens, dimmer boards could be employed for extra flexibility. These controls — operating 700 channels — included two ETC Expression 2Xs with 3X software, eight ETC Sensor dimmer racks, and dozens of Strand CD80 dimmer packs.

Building up the base light in the Great Hall was a must. Lukas explains, "We hung over 65 two-circuit 6K tungsten space lights on the grid — a third were ½ blue and the others were normal so we could switch back and forth between moonlight and daylight looks without re-rigging. That added a lot of weight to the grid structure, though.

"Our engineers then told us that they had miscalculated how much weight the truss system could hold, and that we would have to cut back on our lighting. The problem was that the structure carried the weight of the lights from the center of the beams running across the set instead of distributing it to the sides, where the eight 20"-wide vertical support towers were located [inside the set's marbled columns].

"However, the key grip, Loren Corl, and rigging key grip, 'G' Dhiensuwana, made a model that demonstrated how the grid could be reinforced with two arches over the top of the structure that would redistribute that weight back to the towers. That made it possible to hang our space lights and some other big units we needed in there."

Those other units included four 10' x 10' lighting "pod" platforms hung with chain hoists, which allowed them to be easily raised and lowered, depending on the shot. Each pod held an lamp operator, two 20Ks, a 10K and additional lamps, and one was mounted in each of the Great Hall's corners. "Each pod weighed about 4,000 pounds," Lukas estimates, "which limited how many we could have and how many lamps they could hold."

"The pods gave us a flexible option to put backlight and crosslight into the set and extend whatever was coming through the windows," Lindenlaub says, adding that 80' and 60' Condors were then positioned outside the set to light through the set's eight 9' x 5' oblong windows. "For our daylight coming through the windows, we used eight Raybeams [each containing 30 Par lamps with NSP bulbs]. They gave us the best output and the widest spread by the time the light hit the floor in the Great Hall. Because our exteriors were going to be done in England, I didn't want our daylight to be too hard, so we added some spotty 12-light Maxi Brutes in our Condors to extend and soften the spread on the floor." The sunbeams were generally one to two stops over the basic T4 exposure.

Helping to carry these beams through the Great Hall was a light layer of smoke, which Lindenlaub had initially planned to use throughout the film to add some fill to shadow areas and help with contrast problems. He notes, however, that "it was flu season and everybody was already having respiratory problems, so we cut back on the smoke as much as possible. With smoke, less is always more.

"For our moonlight effect, we instead used LTM 18K HMIs corrected with ¾ CTO, because by the time we gelled our tungsten lamps ½ blue, we couldn't get enough light out of them. We didn't want the nights to be too blue, and the 5279 has stronger color saturation, so I felt that a ½ correction difference between warm and cold was almost too much for this film. Our warm end of the spectrum was usually around 2900°K and our cold was about 3800°K."

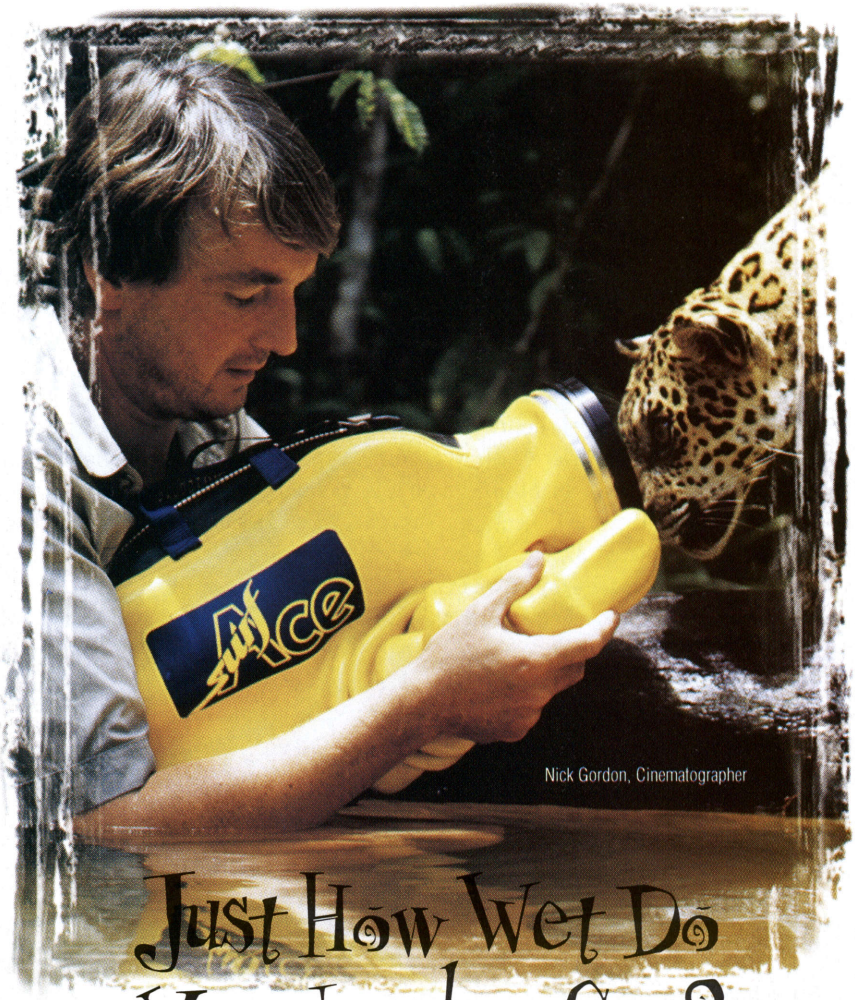
The predominant hues in production designer Eugenio Zanetti's sets were brown and red, and these colors were especially strong in the Great Hall. "The sets didn't need any more color coming from the lighting," Lindenlaub says. "That meant the light could be fairly neutral, but reds and browns are hard to light because they absorb so much light. You can't see it by eye, but it was important to consider."

"The set was so richly decorated and layered with elements that we started to selectively de-emphasize areas by leaving them dark," adds Parks. "That helped keep us from broad-lighting the set, which would have looked flat, while also creating a moodier feel and leading the audience's eye to where you want it. Walter and I have done that before, but not on this scale; selectively using Raybeams and 20Ks is different from doing it with Par cans or 5Ks."

Ghostly Greenhouse

Hill House's dilapidated Greenhouse is a study in how sunlight cannot always dispel gloom and doom. With glass walls soaring to heights of more than 40', the structure's most prominent feature is a massive spiral staircase that serves as the basis for a key dramatic scene, as a similar set of steps had in the 1963 *Haunting*.

Driven by the mansion's spirits, Nell climbs the unstable staircase, which was built in a configuration



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that resembles the double helix of a DNA strand. Fearful that Nell will throw herself from the top like previous victims of Hill House, Dr. Marrow races upwards to rescue her, as the structure collapses behind him.

Despite offering 270 degrees of floor-to-ceiling "window" space, the Greenhouse proved problematic to illuminate due to its poor positioning in the dome. Unfortunately, half of the hanger's ample floorspace is taken up by the Batcave set left over from *Batman and Robin*. Meanwhile, it was believed that the Greenhouse should be attached to the Red Parlor (which itself was attached to the Great Hall) in order to facilitate camera moves between the two spaces.

With the Greenhouse wedged between two huge sets and shoved up against the overarching dome (which limited headroom), there was little space for lights. "It was a perfect example of how not to build a set," Lindenlaub says with a grim smile. "We never did a shot that physically linked the Greenhouse and the Red Parlor. Conceptually, the idea was exciting, but it wasn't very practical. And because of the lack of space, the big lights we used for a daylight source had to be brought in close."

Parks looks on the bright side, saying, "Fortunately, we had a big opening in the dome so we could light in from one side, and another spot above the Greenhouse where we could angle in a Condor, but it was also only about 15' from the glass. That at least gave us a three-point lighting scheme."

"Jan and I were both against frosting the glass, because then the room would feel like the inside of a giant ping-pong ball," Lindenlaub details. The glass panels in the Greenhouse were therefore painted and then scraped to look dirty yet transparent, allowing the camera to see just beyond them. "To create our daylight effect, our rigging key grip, 'G' Dhiensuwana, put a 60'-tall white cyc backing and silks behind the glass, and we front-lit them with cheap tungsten flood lighting. Tungstens weren't practical to create our directional sun source, though, so we brought in a BeBee light with 15 6K HMI Pars on it, gelled full orange plus ¼ straw via a 20' x 30' frame hanging some distance away from it on another Condor — if we'd put the frame any closer, it would have burned up. That gave us about 3000°K. Behind the BeBee, we had some Condors with LTM 12K and 6K HMI Pars, also gelled but cooler, and then two emergency Condors with lamps that we could move around to fill holes."

Lukas adds that nothing could be hung from the Greenhouse itself, and there was no room or time for a truss system like the one built over

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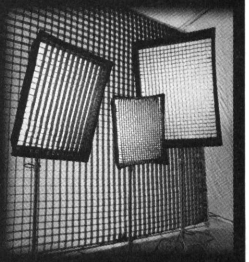

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the Great Hall. Instead, overhead ambiance was supplied by floating three 8' x 12' 8K tungsten Lights Up! balloons above the set's open ceiling.

To create a moonlight effect, the white cyc was replaced with black material and the balloons were gelled with ¼ CTB, while the practicals inside the Greenhouse were left very warm. The BeBee and HMI Pars on Condors were warmed with ½ CTO. Small warm sources positioned outside the glass helped give the illusion of depth beyond the set walls.

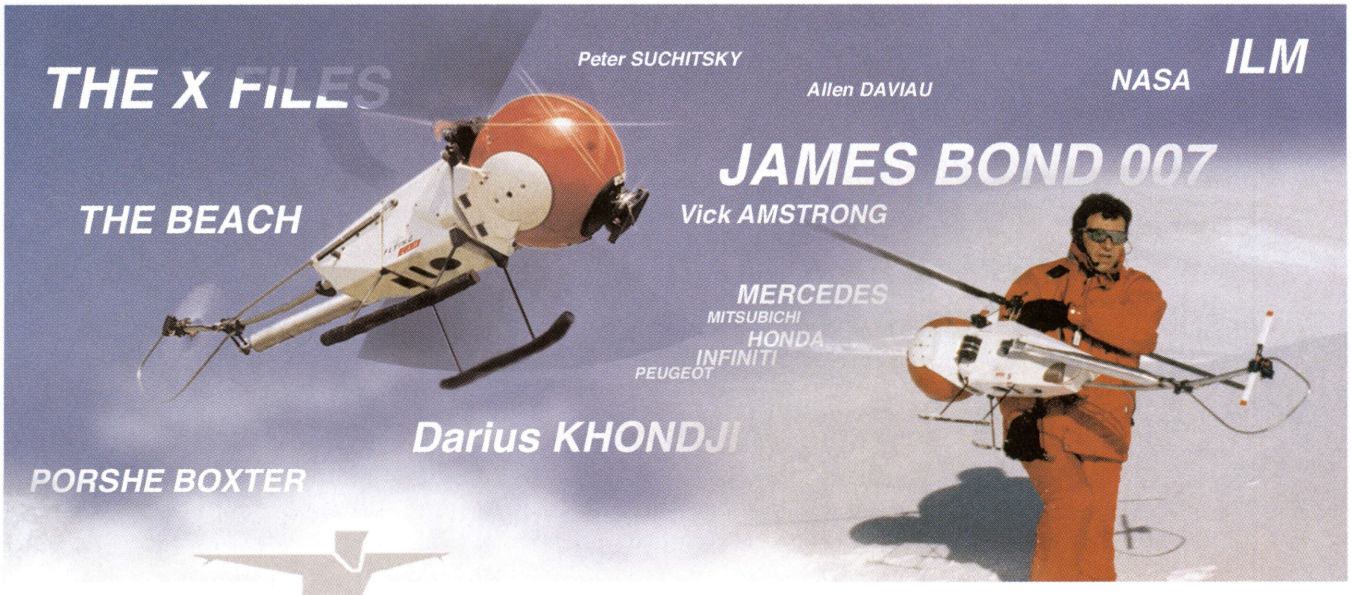
To cover Dr. Marrow as he climbed the failing spiral staircase, the crew deployed a Super Technocrane, which could be extended as actor Liam Neeson traveled upwards. A dimmer-controlled Chinese lantern mounted to the hothead added a bit of fill to Neeson's face, and would even pan with the camera. "The action scenes around the staircase had the trickiest lighting because we were using the Technocrane and often multiple cameras," Parks says. "In total, we covered the scene from more than 100 different angles, so the lighting had to remain constant over a period of days. Also making it tough was the fact that the stairway's collapse had to be shot in sequence, meaning that we had to revisit the same camera positions and lighting over and over again, running as many as five cameras at once. There was some high-speed work as well — 40, 48, and even 60 fps — so our light also had to carry that."

Spirits Begone

Looking back on the 89 days that he and his crew worked in Hill House, Lindenlaub remembers the vampiric hours — entering the Long Beach dome before dawn, creating perpetual nights, and then leaving after nightfall — and the challenge of doing stage work. "I generally try to light stages to look like locations, but because time was such an issue on this film, having all of those lights burning was a bit of a trap sometimes," he describes. "At certain points I got nervous, and when that happens, a cinematographer will start to play it too safe and maybe overlight things. In retrospect, I wish I'd had five extra minutes on each shot to stand back, study the lighting and figure out how to make it look more natural. Nature never looks overlit; movies do. I think the film turned out well, but everyone always wants to do better. Hopefully, it will also be believable and scary for the audience — we'll see!" ■

Additional reporting for this article was provided by Ron Magid.

An extended version of this article will be available on the ASC's Website at www.cinematographer. com.



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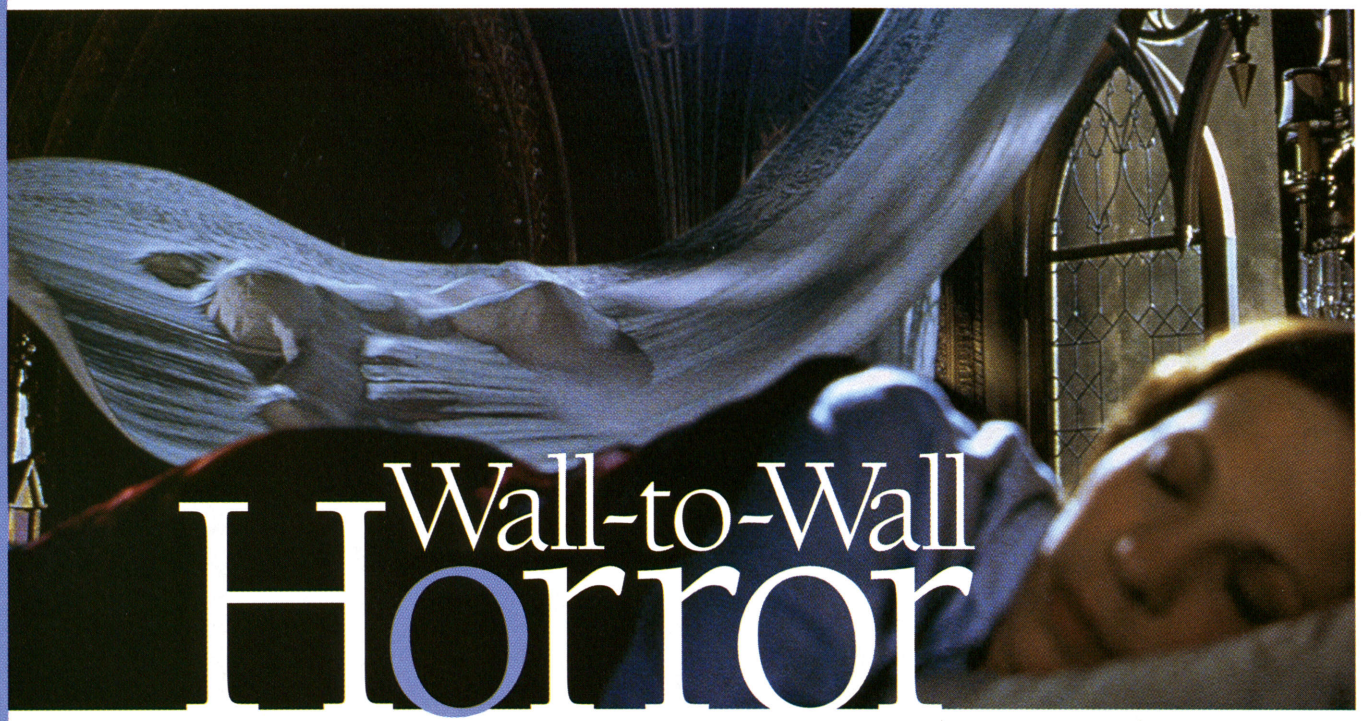


Wall-to-Wall Horror

Top effects men John Frazier and Phil Tippett decorate a house with some hideous details in *The Haunting.*

by Ron Magid

Unit photography by Frank Masi

Replete with high-octane paranormal activity, *The Haunting* is being billed as a "re-imagining" of Shirley Jackson's novel *The Haunting of Hill House.* Rather than remaking Robert Wise's 1963 effects-free classic (see historical article on page 82), this new version from DreamWorks, SKG manipulates digital technology to scare the living daylights out of the audience. "To me, it's more like a psychological horror adventure," opines director Jan De Bont, ASC. "You see more, but at the same time, we don't show everything — a lot is left up to the imagination. Lots of scenes are built upon what's not seen, or very simple things that are extremely effective."

The visual conceit behind De Bont's update is that the film's evil abode literally embodies late owner Hugh Crain, whose malevolent spirit permeates Hill House's every nook and cranny. The *real* spooks behind the scares are physical effects master John Frazier and animation guru Phil Tippett (*Starship Troopers*, *Virus*), who used every architectural nuance at their disposal to breathe supernatural life into Hill House. "Our job was to create the character of the house, and we used a lot of architectural elements to make the dwelling come alive," Tippett says. "The difference in this show was that there's a tremendous amount of interdepartmental collaboration between our team, the production designer and everyone else, since the house's character is a combination of architecture, lighting, direction and visual effects. This project involved tremendous coordination — there were more things that had to be figured out than there are on, say, a dinosaur or bug picture."

De Bont, a former cinematographer of considerable renown, already had a close working relationship with John Frazier, with whom he had previously collaborated while shooting projects for director Paul Verhoeven. The effects expert had also lent his skills to De Bont's first directorial efforts, *Speed* and *Twister.* Frazier handled as much of the on-set mayhem as time and money would allow, including sequences involving cracking walls, flying buttresses and the collapse of twin intertwining staircases. "We've worked together on so many movies that we have a shorthand communication, which is great," De Bont says. "I told him, 'John, I need a double staircase that can move, but is safe for the actors — and at the same time can fall apart!' He constructed a double-helix staircase that came alive without any visual effects. It's just pure mechanics with an incredible, brilliant design."

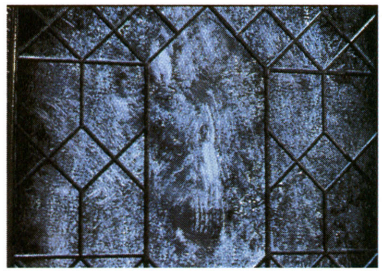
De Bont hired Phil Tippett to create the ghostly manifestations that Frazier found impossible to conjure up on the set. Since De Bont wanted to make Hill House a literal character

Photos courtesy of DreamWorks, SKG

in the film, hiring a character animator such as Tippett turned out to be a savvy move. "We were very excited that Phil was available, because he doesn't just animate things — he gives them character," De Bont marvels. "Our house had to come alive, and you had to feel an emotional connection to it. Otherwise, you get very empty effects that are visually exciting but don't mean much. Thanks to Phil, the effects became more than just walls breaking — they had a soul."

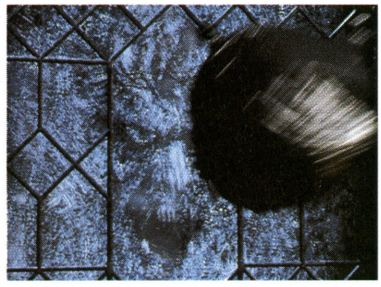
From the creative team's perspective, *The Haunting*'s surly ghosts were not nearly as frightening as the project's brief production period — as well as the short schedule between the completion of shooting and delivery of the final print. Says Tippett with a shudder, "The show was slated to be in theaters nine weeks after principal photography wrapped! The production schedule was so accelerated that we were inventing procedures [at the very last minute]. Doing a Tyrannosaurus Rex or a giant bug is one thing, but ghostly and spectral events occur pretty much in the mind's eye of the beholder. We were dealing with conceptual issues, like 'What does a ghost look like?' and 'What are the processes available in computer graphics by which we can make these things?' The entire procedure can get very top-heavy and cumbersome. Nothing's ever been made easier by CG — it's intensively difficult."

"Difficult" was certainly the operative word when Tippett and his crew were fashioning the small, subtle effects De Bont sought in order to bring Hill House to life. "Shadows, wind and other such forms are very process-oriented," Tippett adds. "It takes a great deal of programming and heavy, computer graphics/computer science-laden engineering to make those effects work and appear to be photographically representational; a great deal of

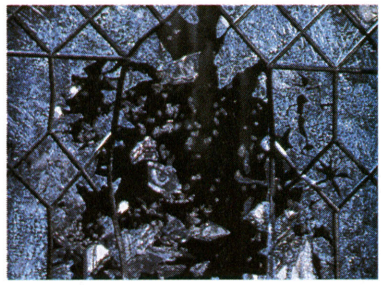


effort was put into coming up with quite convoluted, complicated processes that were used once or twice. That's brutal on a schedule like the one we had."

Tippett's partner, Craig Hayes,



headed up the project's myriad R&D efforts. He pushed the company's Silicon Graphics machines to enable animators to generate the climactic confrontation between Nell (Lili



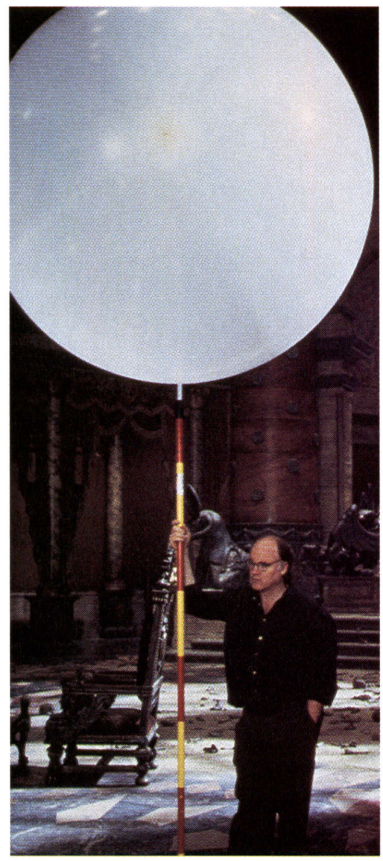
Taylor) and the ghostly Hugh Crain, as well as to produce entities that appear on windows in the form of condensation or ice. A particularly tricky effect was required for a

sequence in which Nell's hair is coiffured by invisible hands. Tippett Studios had tested CG hair before, but *The Haunting* demanded rather convincing hair effects: in one instance, ghostly fingers pull actress Lili Taylor's hair up into a bun resembling the deceased Carolyn Crain's hairdo. "Craig gaffed all of that by using different kinds of plate warping and by adding computer-graphic hair to some shots," Tippett says. "We worked carefully on-set with the hairdresser, who completely plastered down the hair on one side of Lili's head, so we could do hair replacement on that half of her head! It involved a lot more than just swirling Lili's hair into a new hairdo — we had to show the invisible fingers actually working the hair. We did a number of run-throughs, as well as tests with wires and gloves, to see what that might look like."

After photographing Taylor with her hair on the camera side greased back, Tippett Studios' artists match-moved a CG cranium to the actress's skull to give the animators a base upon which to work. "We then made a model with a bunch of hair strands on it — not as many as she would really have, but maybe around a hundred hairs," Hayes says. "The animator, Eric Reynolds, did an incredible job of separating all of those strands. He also came up with puppeteering techniques in the computer that would allow the ghost to twist and pull the hairs as if by an invisible comb, and wrap them tightly around the character's head in a bun. After he did his animation, we would run it through a custom process that actually *grows* hair. The program takes a small number of hairs and then populates the areas between them; we'd start out with a couple hundred hairs, and end up with a few thousand. Trying to match our CG hair to a real person's hair made it a bit trickier to light. Real hair is so thin that it responds to *stage* light and *stage* shadows differently

Opposite: Nell (Lily Taylor) slumbers as a Hill House spirit appears in a curtain. This page: A series of shots reveal spirit of Hugh Crain as condensed vapor on a stained glass window. Once the glass shatters, his spirit resumes its shape and pursues Nell.

Wall-to-Wall Horror



Visual effects maestro Phil Tippett helps survey the lighting in Hill House's Great Hall with the aid of an 18-percent gray sphere.

than our CG hair. All of the hair process work was done with custom software, and we then used Softimage for the animation and Renderman for rendering."

Tippett Studio also produced a host of other ethereal effects that ran the gamut of paranormal phenomena. "We created some ghostly shadows that form into eyes that stare at Nell," Tippett reveals. "We did a 2-D-type effect that appears over some of the architecture of Nell's room to 'spy' on her, like a precursor of the paranormal events to come. We also created shots of ghostly breath that worked in much the same way. The breath has some materiality to it, like a 'puff' in a room that doesn't have any atmosphere. We also tried to convey the turbulence of the breath, so we used candles in the rooms to give it some feeling of volume. There's a scene where the presence of Hugh Crain begins to form as condensed breath on the window. It would have been impossible to ice up the sets, so our effects animation department — a crew of six animators headed by Eric Levin — made some pretty good-looking particles to create the effect of moisture condensing on glass and then turning into an icy apparition. Zoe Peck composited a 3-D Hugh Crain face, running it through a number of time-stretching and streaking passes. Nell realizes that Crain's presence is very threatening and throws a music box through the window, but after the window smashes, all of the glass shards stop, fly back out at Nell and pursue her."

One of the film's creepiest sequences comprises six shots in which a little girl's ghostly spirit manifests itself behind a curtain in Nell's bedroom, and then slides down under the bedsheet before appearing in the fabric of Nell's pillow. "The scene starts with wind blowing a curtain into the room, and as the curtain settles back down again, it falls over the shape of a child," Hayes says. "Nothing was practical in that particular shot. We actually struck all of the practical curtains from the set and shot the plates completely empty, because we needed the ability to make the curtain move however we wanted. We went with a full fake CG curtain and built the model in Softimage. We then painted it and put a lot of effort into shading it to simulate the translucency of the fabric and the fact that it's being lit from both sides — by the exterior moonlight and interior lighting. After working that out, we set the curtain up as a puppet so the animator could animate it to hit the proper marks. After the blocking of the curtain was approved, we did a dynamics pass, which added another layer of wind, as well as surface rippling, flapping wrinkles and little details that would have been non-trivial to animate by hand."

Synching the movements of a live actor with the CG curtain would have been impossible, so Tippett Studios animated the ghost child. "That was just a regular old geometric model that we built of this cherubic little kid," Hayes says. "The animator, Pete Koenig, took cues from different parts of the curtain moving up and down, and tried to work that into their performance to make it look as if the child was riding through the wrinkles on the top of the curtain. As the curtain began to settle, she would disappear and then reappear, almost as if she was surfing! Robin Watts animated the shot in which the kid moves into the set, and did an incredible job of getting some beautiful follow-through. Blair Clark supervised 2-D animators over the intensive five month postproduction schedule, which happened to overlap with the shooting schedule."

Audiences are only seeing the *effect* of the ghost child on the curtain, sheets and pillow. In order for viewers to believe that it's truly a child's spirit, the apparition had to move like a real child. The artists therefore utilized facial capture to create the ghost child's expressions. Rather than hiring a child actress, Hayes recorded a performance by Tippett Studios employee Lisa Cooke (a former actress herself) and mapped her features onto the ghost's face. "We then ghosted in a little face, so you can see a hint of Lisa's features behind the curtain and the sheets," Hayes says. "Not only did we deform the curtain with the kid model, we also lit and rendered the child herself independently so that the compositors could mix in those elements. We were aiming for something that was right on the edge of recognition, but still subjective — we tried to err on the side of subtlety."

Compared to a more concrete form, such as a *Jurassic Park* T-Rex, the real complication in executing ghostly shots comes with the iterative steps necessary for the effect's completion. "For these ghost-child shots, for example, we had to get the

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BY SUE MASTERMAN

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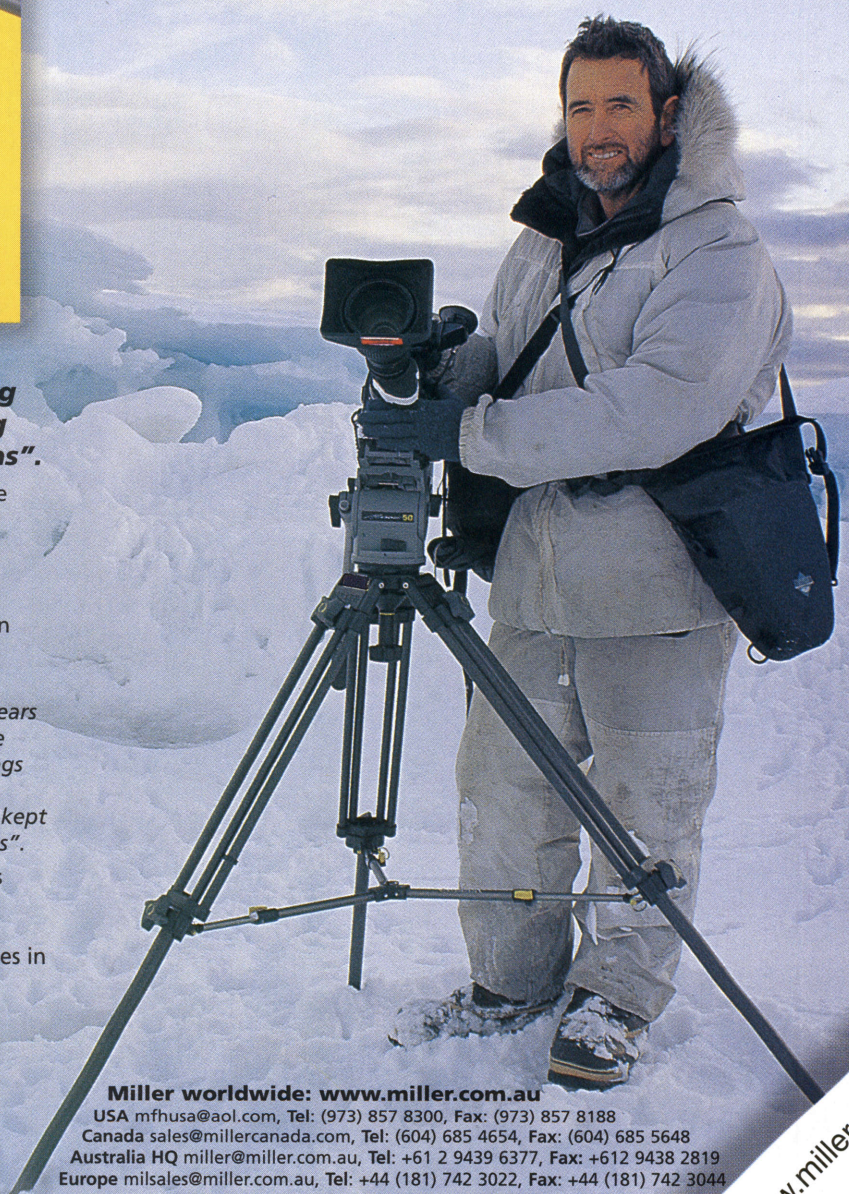

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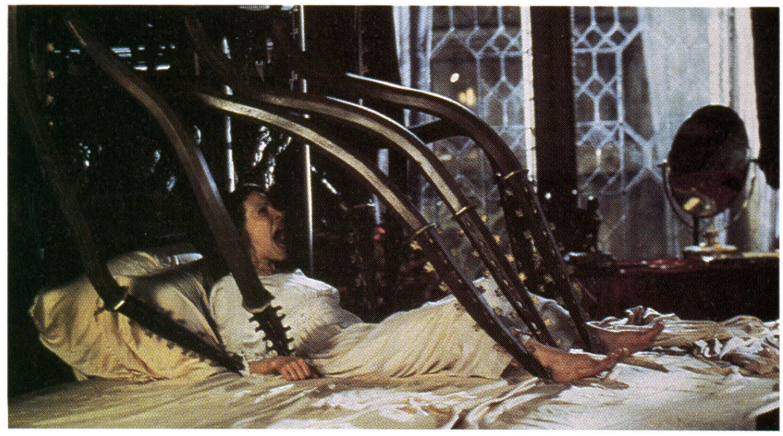
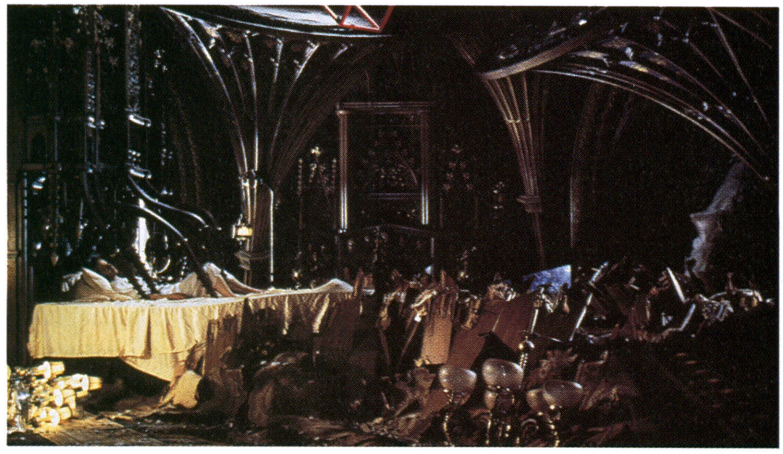


Top: Nell is pinned to her bed as the room comes down around her. Special effects supervisor John Frazier (above, at right, with director Jan De Bont) incorporated hydraulics into the headboard and the room's structure so everything would collapse on cue (below).

initial curtain animation approved before we could actually animate the ghost child to that curtain," says Hayes. "Once that's been done, you can't tell what it looks like until you've run the curtain *and* the ghost child through a fabric dynamic pass and then light that! We might find ourselves days away from seeing the final result, versus the hours it would take with traditional animation."

As *The Haunting* progresses, Hugh Crain's spirit forms an ever-deepening attachment to spinster Nell; she becomes the target of his more ghoulish attentions, and at one point is nearly raped. In the film's first out-and-out supernatural sequence, Crain's demonic phantom attacks Nell as she sleeps. De Bont visualized the evil entity actually manifesting itself through the materials of Nell's bedroom. Instead of having Crain's face bulge out of a wall, which might have looked too rubbery, the director wanted the spirit to appear as a physical force pushing against the room's masonry and wood foundations. De Bont explains, "The style we used was inspired by the way that Francis Bacon painted faces. Bacon never used the right facial colors, but rather whatever was on his palette. In the



case of Nell's bedroom, the palette was plaster, woodwork, linen wallpaper, paintings and wall carvings. It's a non-literal translation of how to make something come alive, using organic material as a presence."

This sequence became a true collaboration between on-set practical effects supervisor Frazier and the digital artists at Tippett Studio. First, Frazier brought to life the eight-arched buttresses (known as palmettos) fixed in the octagonal room's every corner by physically pushing them in with hydraulics. The palmettos themselves resemble cones standing on their ends. After they were tipped over from their bases, the room began to appear ever smaller, as though Crain were converging on Nell. The sequence also features a particularly nasty poster bed whose canopy descends in guillotine-like fashion, trapping Nell. The effect of encroaching claustrophobia successfully preys upon childhood fears of bedrooms suddenly coming to life in the middle of the night. "John's work was very important to start [the sequence] up, because it feels real," De Bont opines. "A lot of very complex hydraulics were involved in the construction of the sets — bending, pushing, turning. It's quite amazing what had to be set up hydraulically to make that room begin to animate."

The contribution of Tippett's artists begins when the room's roof warps and cracks, taking on a disturbing physical aspect as Hugh Crain's spirit explodes from the ceiling and attacks Nell in the course of 20 backbreaking CG shots. The idea of having an entity made up of materials from the house itself lends the scene a truly remarkable quality. "I insisted on that, which makes for amazing images that are much more scary," De Bont submits. "It leaves layers of imagination available to the audience, which is great."

Tippett was somewhat concerned that simply morphing the

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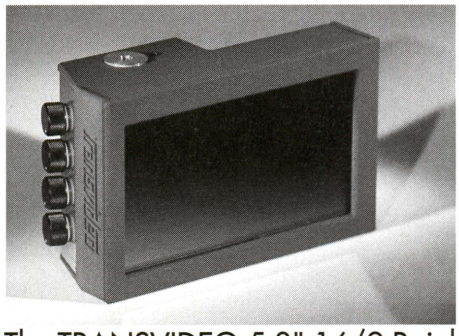
ceiling into a giant face might make it look merely like rubber stretching. "The trick was to straddle the gap between a hallucination — where everything bends, swirls and has a tendency to look like rubber — and something more palpable," he explains. "We tried to maintain the properties of every material. Craig Hayes, who designed all of those effects, put a great deal of effort into basing the material composition of the room on Eugenio Zanetti's tremendously rich production design. The room is filled with velvet trim, and behind the velvet, there's a lot of lathe, plaster and other details that begin to transmute as the room comes to life. All of the materials take on the look of Crain's face."

Adds Hayes, "We modeled all of the floorboards, carpets, velvet and plaster walls, ceiling, paintings and console tables. We duplicated about a quarter of the props in the room so that we would have control over them — including four fake chandeliers that rattle and swing around, and the ceiling with all of its molding and trim."

Traditionally, CG has not been an ideal way to achieve physical events such as breaking wood and exploding plaster, so effects artists tended to opt for practical solutions. In this case, Tippett Studio animated everything in the scene to coordinate the breaking ceiling and floors with the emergence of Crain's gigantic face and hand. "A lot of what we've done would typically be achieved with practical elements, but in this case we used weird computer graphics," Hayes concedes. "We've broken boards, ripped carpet, busted up plaster bits, and shot dust all over the place. We tried to launch the plaster bits and dust off of the texture maps or the dynamics of the boards ripping, but the dramatic actions are



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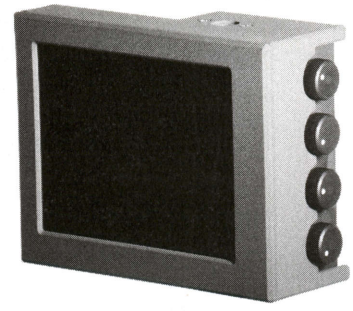

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real keyframe animation. We can't just push a button that breaks all of the boards up, but we can launch particles off a board that's broken."

As a reference for the massive gnashing face that explodes from the ceiling, Hayes used cyberscans of actor Charles Dunning mugging before a camera. One might wonder why motion-capture wasn't used to allow the actor's facial movements to drive the cracking and bending of the room's architecture. Tippett explains, "Because of the level of detail, the material stressing and straining doe not come through in a motion-capture performance. Bridging the gap between a human face and the material world required mostly keyframe animation."

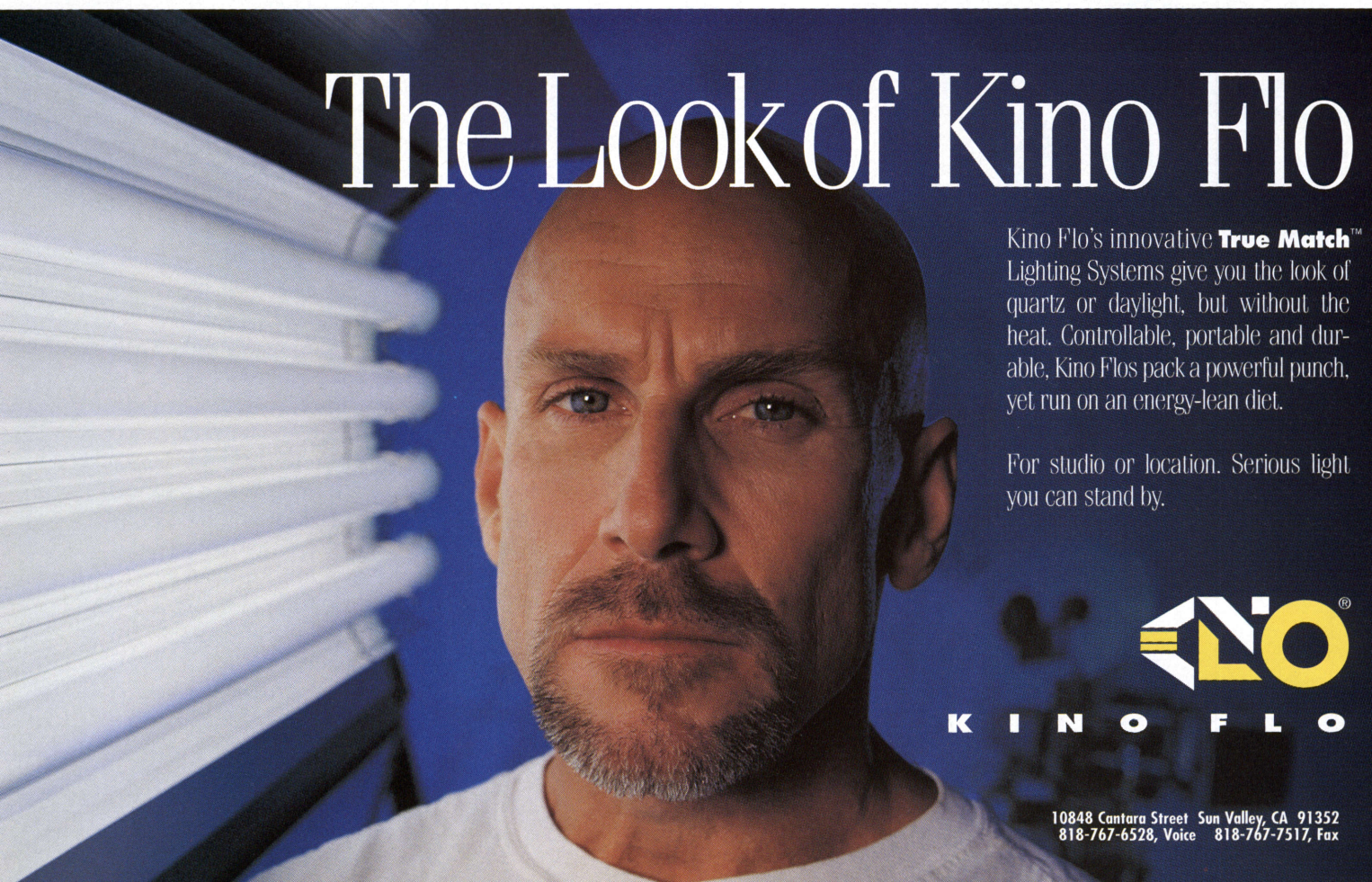
Adds Hayes, "Crain's face is *very* distorted — it's not just poking through the ceiling. He's going through lots of strain and agony to get himself into the room — it's almost sorrowful. The final result needed to be hand-animated."

After the facial animation was completed, Crain's visage looked like a head pushing against latex. "When you first start with the computer, you get latex!" Hayes remarks. "We then measured how far the face poked out from the ceiling, and used that number to automatically dial up some cracks on the face. However, they tended to look like 'automatic' cracks — usually, we supplemented them with keyframes. We converted the Softimage animation over to Renderman, and called up an entirely different set of settings in the conversion process. This allowed us to perturb the geometry in the render and create cracks using what we call 'decals.' We first used decals on *Starship Troopers* to place bullet holes on the bugs for the animators.

"On *The Haunting*, the decals gave our animators the ability to place rips, dents or cracks on the walls. We had little slider controls so the animators could start out with the cracks invisibly closed, and then move up the dials up and rip the cracks open. It's not procedural, but it is process-driven. Someone still has to paint the cracks so that they can be animated. The information that generated those cracks in the first place is also used to generate dust."

As a director, Jan De Bont has always exploited the latest technologies to deliver high-powered visuals, but *The Haunting* is arguably the most effects-heavy film on his resumé. "I totally agree with George Lucas that moviemaking is a purely visual media in which images are manipulated to create certain emotions," De Bont concludes. "Visual effects are an incredible tool. It's an exciting process, and the talent that exists right now in the visual effects field is amazing." ■

Opposite: Frazier designed the spiral staircase in the Greenhouse to safely fall apart as Dr. Marrow (Liam Neeson) climbed upwards.



Sophisticated Lady

HBO's *Introducing Dorothy Dandridge*, photographed by Robbie Greenberg, ASC, spotlights the life of the talented singer and actress.

by Jean Oppenheimer

Unit photography by Sidney Baldwin

Director of photography Robbie Greenberg, ASC certainly loves history. As a followup to his ASC Award-winning work on HBO's *Winchell* (see *AC* May '99), the cameraman embarked on a second biopic for the cable network: *Introducing Dorothy Dandridge*, the tale of the talented singer/actress (Halle Berry) who became one of Hollywood's first African-American leading ladies.

Being young, gifted and black meant tough times in the 1940s and 1950s, when the few available roles tended to be along the lines of jungle queens and domestic servants. Dandridge, who starred in *Porgy and Bess*, became the first black woman to earn an Academy Award nomination as Best Actress, for her role in the 1954 picture *Carmen Jones*. Armed with courage, she fought to overcome racial barriers in both the entertainment industry and society at large, but professional disappointments and personal tragedies plagued the performer throughout her life. At the age of 42, Dandridge died from an accidental overdose of a prescribed antidepressant.

Although the events depicted in *Winchell* and *Dandridge* take place in similar time periods — the former is set in the 1930s and '40s, while the latter occurs during the '40s and '50s — the projects required very different stylistic approaches. "*Winchell* was a guy's movie with fedoras and overcoats, cigarette-smoking and half-lighting," reasons Greenberg, "whereas *Dandridge* is a lady's show that's about beauty and makeup, hair and wardrobe."

Both the cameraman and director Martha Coolidge wanted the film to reflect a romanticized view of Hollywood. "I think Dandridge was really attracted to the glamour and romance of the movie industry," muses Greenberg. "I wanted to heighten that in the photography, to give the film a kind of fantasy [feel]."

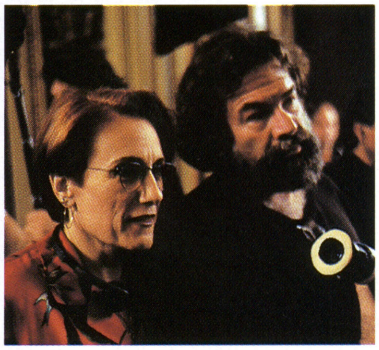
With the exception of staged musical numbers, however, the cameraman wanted to avoid overt theatricality. In general, Greenberg eschews gimmicks: he doesn't like to manipulate film stocks, and he uses colored gels and filters sparingly. In his view, cinematography is about "capturing a very human moment," so it's not surprising to learn that his major influences include such gifted still photographers as Henri Cartier-Bresson, Robert Doisneau, Eugene Smith and Alfred Stieglitz. Growing up in the Bronx, Greenberg developed an interest in photography but had no opportunity to pursue the art. After moving to San Francisco in 1969, he got his chance. Greenberg recalls the era as a fortuitous time to be in the Bay Area, where he quickly

Photos courtesy of HBO.

fell in with a group of underground filmmakers making 16mm concert and documentary films.

In 1975, he moved to Los Angeles to pursue narrative films; one year later, shot his first feature, the street drama *Youngblood*. The film was well-received, but Greenberg had to struggle through eight more years before being accepted into the cameraman's guild. Numerous projects followed, including the telefilms *The Winter of Our Discontent* and *Second Serve: The Rene Richards Story* and the features *Creator*, *Sweet Dreams*, *The Milagro Beanfield War* and *Free Willy*.

Dandridge was Greenberg's first film to feature dance numbers, and lighting these six sequences



proved to be one of the production's biggest challenges. "On a larger film, you might have somebody like a stage designer helping you design a lighting scheme for the theatrical numbers," notes the cameraman. "In that situation, once you reach an agreement on the design, you're basically just augmenting what has been created." Greenberg didn't have such a luxury on *Dandridge*.

With the exception of a musical number taken from *Carmen Jones*, which Coolidge wanted to replicate exactly, the song-and-dance routines were left up to the filmmakers' and choreographer's discretion. Although Greenberg wanted the sequences to reflect the story's era, he didn't want them all to look the same.

The picture's first two dance numbers take place at the legendary

Opposite: Dorothy Dandridge (Halle Berry) is the epitome of sultry allure as she takes the stage. The film's musical numbers (left) were the rare instances in which cameraman Robbie Greenberg (at far left, with director Martha Coolidge) allowed his lighting to become theatrical. He generally used soft light (as seen below) to create a sense of glamour and fantasy that supported Dandridge's dramatic life story.

Cotton Club. Although both were performed and shot in the same physical space, they have completely different looks. The Dandridge Sisters, an act Dorothy performed with her sister and a friend before branching off into a solo career, come on first, followed by an energetic routine by the Nicholas Brothers. (Dorothy later married — and divorced — Harold Nicholas.)

"The stage looked like a rectangle with a ramp leading out front," Greenberg recalls. "The dancing took place on the ramp. The band sat on the wider part of the structure, and behind that were curtains. I put footlights on the ramp area so they could be seen on camera. They're just black iron forms you can rent, and I used normal mushroom bulbs in them — the units take about 10 bulbs each. From the perspective of the patrons sitting in the nightclub, you just see the black covering, but we shot very little from the audience's point of view. Instead, we shot a lot of cross angles where the lights were actually on camera. They became a compositional element."

The cinematographer used Kodak's Vision 500T 5279 for night shooting, EXR 5248 for day exteriors and EXR 5293 or, occasionally, the 500T for day interiors. When shooting directly into the club's footlights, Greenberg dimmed the bulbs to avoid burning out the image. He then

Sophisticated Lady

Dandridge arrives at the 1954 Academy Awards ceremony in New York City — a scene staged on the Warner Bros. backlot in Burbank.

augmented the light from elsewhere. For the Cotton Club scenes, he used 20Ks positioned around the room, and smaller units behind the band.

When Greenberg lowered the footlights' color temperature, the scene with the Dandridge Sisters took on a golden tone. However, the following sequence, with the Nicholas Brothers dancing in the same space, has a perceptible greenish tint. According to Greenberg, the lighting was not altered from one scene to the next. So why the difference in color? "It was the same setting, but the camera angles were completely different," he explains. "The shots were much wider, and were designed to display the performers' physical abilities — whereas all the shots of Dorothy and her sisters were designed to *hide* their *lack* of physical ability. The yellow-green quality came from the footlights, which created a yellow-green cast on the floor. [The image looked greener] because the angles were wider and you saw the footlights more often. Had we done the same kind of wide shots with the Dandridge Sisters, you would have seen the same thing."

Greenberg says that color wasn't the key issue when he shot the two sequences. He designed a different graphic and photographic style for the male performers because they were real dancers. "In the end, it wasn't really intellectual," he admits with a laugh. "It's one of those moments when you can read anything you want into it, but the fact is that one [style] was intended to hide something, and one wasn't."

For the Nicholas Brothers sequence and a couple of later Dandridge routines, Greenberg covered the dancing in a very traditional manner, from a wide perspective and at a height that would maximize the look of the dance steps. As the performers came on stage, the camera would dolly back and show their entire bodies. The cameraman elaborates, "I looked at some old films, including several by Busby Berkeley and some of Dorothy's own performances, and made mental notes about where the camera was and how it moved. I noticed the use of wider lenses, lower angles and slight backward dollies to keep the performers' feet in the frame. We stayed true to those techniques."

American Cinematographer's set visit coincided with the filming of one of Dandridge's musical numbers — her performance of "I've Got Rhythm" in a club called Ciros. "We started with her alone in the spotlight and everybody else dark," says Greenberg. "When the tempo changed, the lighting changed, with the spotlight fading out and other lights coming up."

He deployed the spotlight in just two of the musical numbers — and only once for an entire routine. "A spotlight is romantic, it looks great on people and it's certainly representative of that time period in nightclubs," notes Greenberg. "But I felt it was a cop-out to use it all the time."

The cameraman also made sure that large sources were always around the room, so that wherever Berry turned, there was a source to highlight her eyes. The actress has very dark eyes, and Greenberg always tried to keep some light on them — especially during performance numbers. "Halle is beautiful — there's no way to light her badly," he says. However, Greenberg notes that Dandridge had to age from 19 to 42 during the film, and reflect the ravages of alcoholism and drug addiction. The filmmakers didn't want to rely completely on makeup to make her appear older or debilitated, and budgetary constraints precluded the use of prosthetics. "Obviously, Halle projects [the changes] in her performance, but as Dorothy got older and more troubled, I also kept the light more shadowy," Greenberg explains. "We took pains to make her less pretty, which is hard to do with such a beautiful woman. But there are techniques that you can use — just moving a light one foot in one direction or another creates shadows on a person's face, which can help to make them look older or more haggard."

From the outset, Coolidge felt that the entire film had to be styled around its lead actress. "All of the colors in the movie had to be complimentary to Halle," she maintains. "You start with her skin tone and then design everything else around it — her clothes, the color of the walls and sets. We were particularly rigorous about the colors in the movie. That created a palette that Robbie could shoot around — to help him focus on people, create a mood and be flattering to Halle.

"For example," she details,

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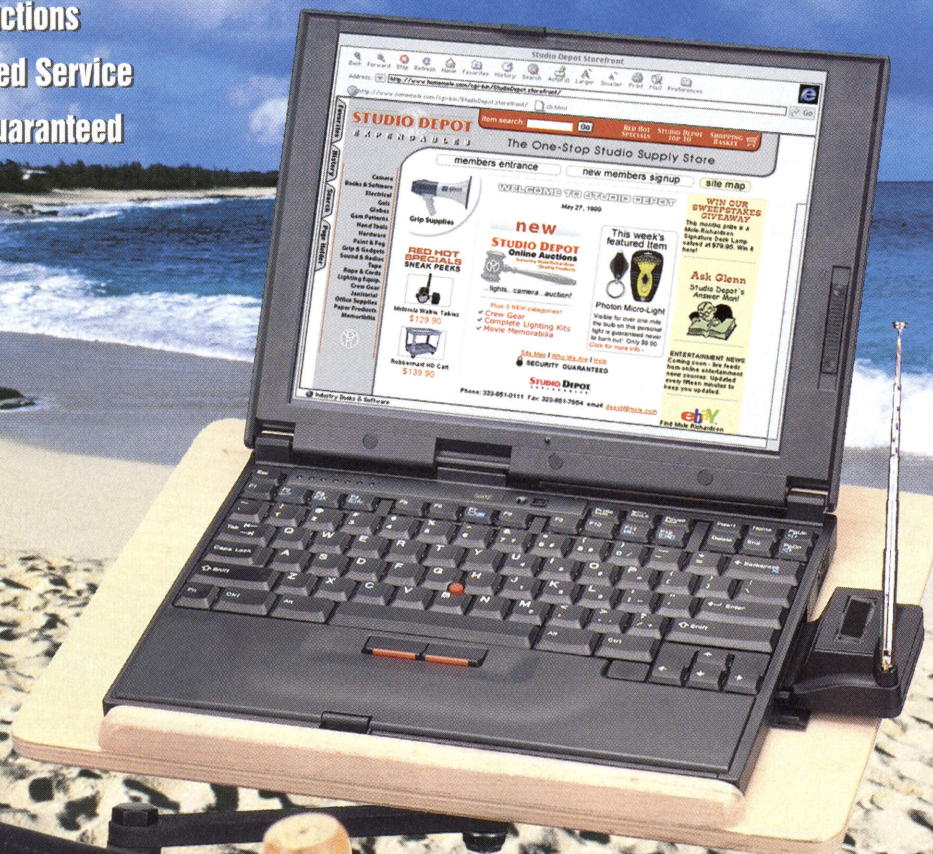

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Sophisticated Lady

"there were no white walls anywhere; we went into beiges and cremes instead. When we did use white, Halle was wearing it. The white gown she wore to the Academy Awards was a copy of Dandridge's actual dress. Halle also wore a white coat and kerchief for another scene set in New York."

Two particular scenes have a richness that practically jumps off the screen: the first finds Dandridge sitting in her dressing room applying makeup before a performance; the second is a shot of the singer trying on her wedding dress before large, curtained windows. "Dorothy was known to do her makeup by a bare lightbulb," Greenberg relates. "She would sit at her dressing table, looking into the mirror, and there was a lamp without a shade next to her. I put the bulb on a dimmer and cranked the intensity down, so that it gave the feeling of a fully lit bulb but didn't burn things out. Generally, when you do that, the bulb doesn't cast enough light on the face to use as your actual source, so you augment the source with a movie light." Greenberg used Mole-Richardson Midgets, placing them as close to the practical source as possible. "It really depends on the angle of the shot," he explains. "My preference is to keep the [supplemental lights] as low as the lightbulb itself, but if the angle of the shot is such that I can't hide one low, I'll hide it above the frame line."

To diffuse the Midgets, Greenberg utilized either a piece of bleached muslin or light grid cloth. The light's distance from the subject generally determines whether he uses a half-grid, quarter-grid or muslin, which he prefers to full grid.

To create a feeling of warmth for the wedding-dress sequence, Greenberg used a 36-bulb Ultra Dino. In the shot, Dandridge stands before a full-length mirror situated in front of a large window, while her mother and aunt sit nearby on the floor. "There was a bank of Ultra Dinos coming through the curtained window [aimed through light grid-cloth], and I dimmed them," says Greenberg. "We hooked them up to separate dimmers rather than a dimmer board. Because I was mixing daylight and the Dino, I cooled the Dino off a little bit with ¼ blue correction. I added a few other lights in the background, as well as a lot of flags and nets. When you light predominantly with one single source, you have to mold the shadows with flags and nets, or everything gets the same light value."

Dinos were also pressed into service for the show's few night exteriors. Rather than utilize a moonbox, Greenberg relied on Condors equipped with either Dinos or 18Ks. The scene of Dandridge arriving at

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What's the best new way to light interiors for the ever-popular car chase? Leave it to veteran action cinematographer David Eggby whose credits range from *Mad Max* to the forthcoming *Blue Streak*.

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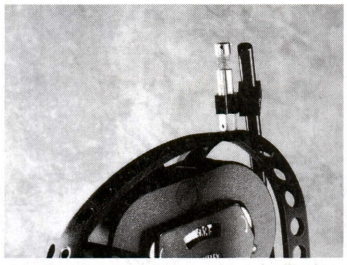
the 1954 Academy Awards ceremony in New York was shot at the Warner Bros. lot. (At the time, two Oscar ceremonies were held simultaneously in New York and Los Angeles and conjoined during broadcast.) "I needed big lights because the setting was supposed to be New York, but I didn't want to light the scene with bluish moonlight," the cameraman recounts. "I wanted to use tungsten fixtures so that the lighting would feel as if it was emanating from streetlights, and I didn't color-correct the lights. I augmented them with smaller units in the foreground or with light bounced off of big sheets of muslin — 12' by 12's or 20' by 20's, depending on how big the shot was."

Greenberg tried out a new camera for the scene of Dorothy arriving at the Oscar ceremony. A self-described "Panavision guy" (he used Platinums and Golds on *Dandridge*), he switched to the company's new Millennium model for a shot of Dorothy emerging from a limousine and walking into the building past throngs of screaming fans and reporters. "The Millennium has some added features built into it — things you have to get supplemental gear to do with other cameras," he explains. "To change speed during a shot, you just program the change in; when you hit the button, the program alters speed and shutter.

"In the arrival scene, Dorothy gets out of the limo and is stopped by a reporter who asks her some questions. As she starts to walk away from

Vintage production gear was used to dress a sequence depicting Dandridge acting in *Carmen Jones*.



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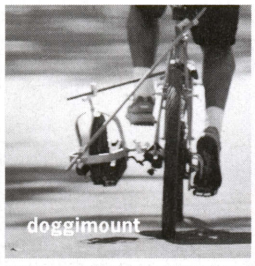

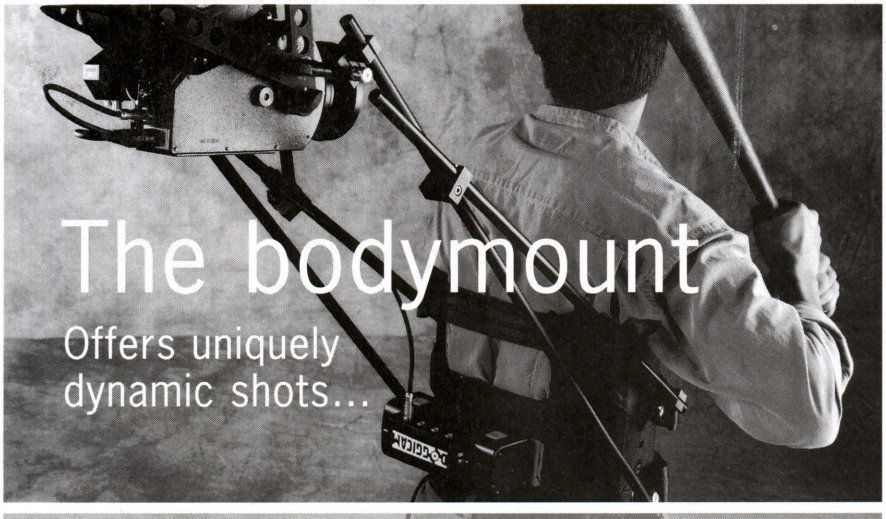

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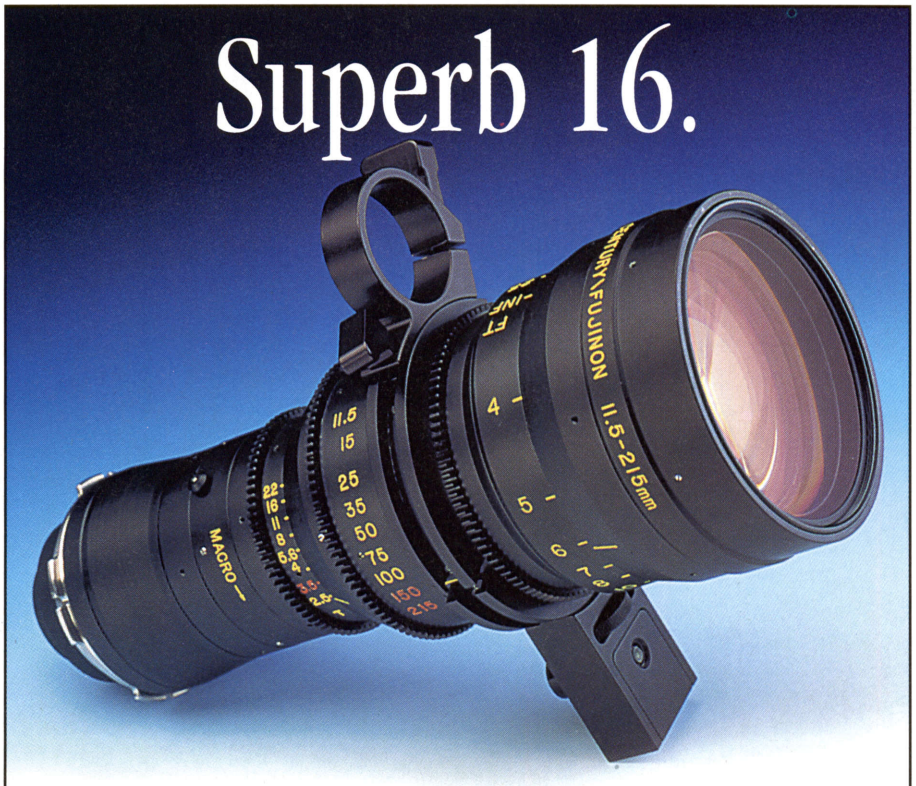

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Sophisticated Lady

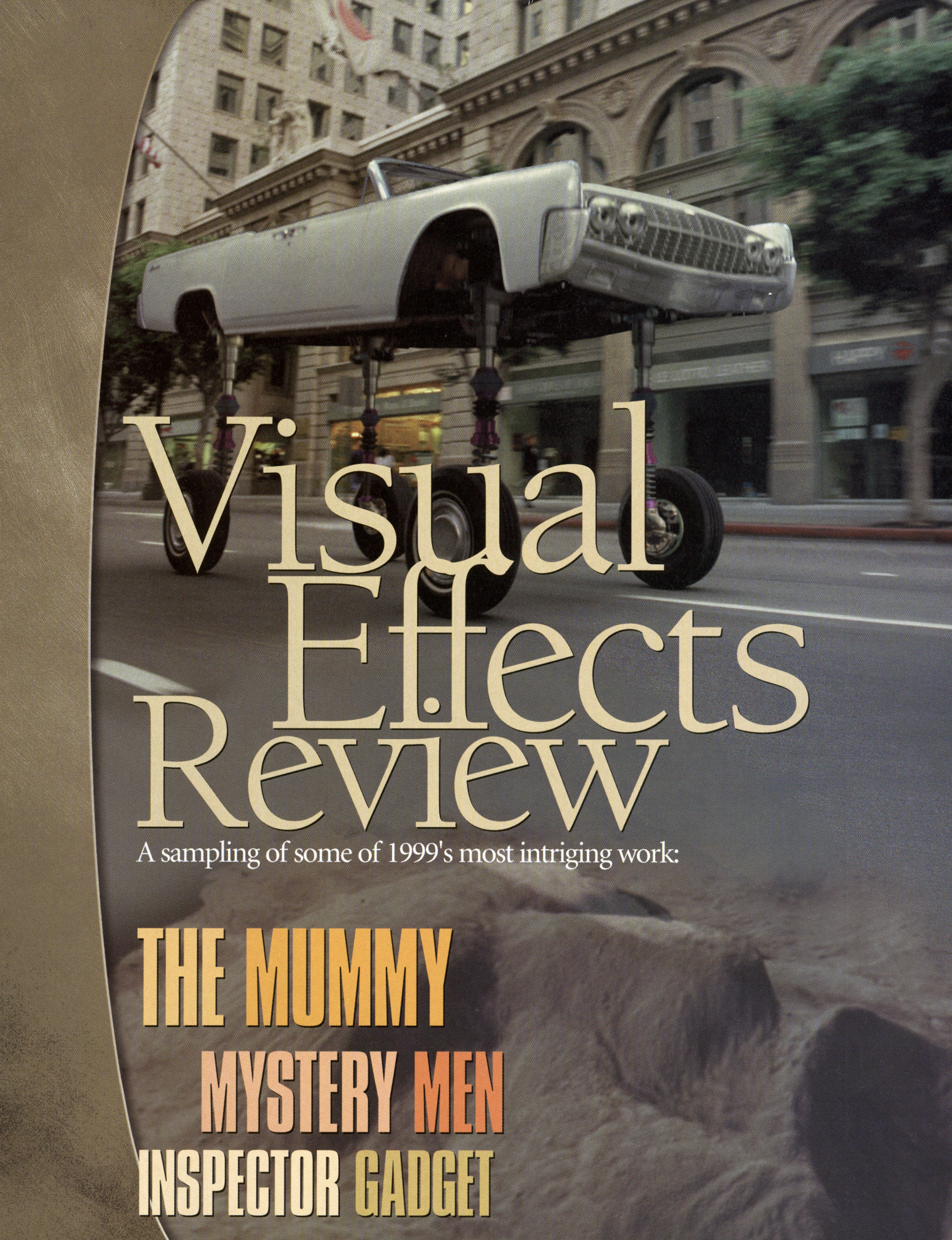
the interviewer, the speed changes slightly to emphasize the non-reality of the situation. Her POV of the crowd and the flashbulbs going off is slightly slower than normal."

Greenberg likes Primo lenses, and on *Dandridge* he employed a full set of primes and the 4:1 zoom. For exteriors, however, he switched to a Cooke 5:1. "I really like the optics of that lens — it's not quite as sharp, and it gives the exteriors a slightly older look," he says. "For interiors, I could control the look with filters on the Primos, but for exteriors I wanted a little help from the Cooke."

He also used a 1/8 black ProMist on the entire film. "It's not a filter you can ever see, but it does soften the edges a little bit," he explains. "I used it because of the time period, and because I was shooting a lot of beautiful women."

Working with familiar and trusted faces is a boon on a relatively tight schedule — *Dandridge* was shot in just 34 days. Greenberg relied upon several key crew members, including camera operator Bill Clevenger (whom Greenberg promoted from first assistant on *Winchell*); first assistant Karl Linde (who moved up from the second assistant slot on *Winchell*); Loren Corl, who served as key grip on both pictures; and gaffer Cal Manning, who joined the team for the first time.

Due to the project's short schedule, Greenberg found himself working more instinctually and less intellectually. Influenced by Dorothy Dandridge's story, he also became seduced by the movie industry's glamour and magic. "In a way, it became very romantic," he acknowledges. "I have the same fascination with the history of filmmaking and certainly its well-known personalities, such as Dandridge and Otto Preminger [who had an affair with Dandridge while directing her in *Carmen Jones*]. During production of the film, I was having a love affair with show business." ■



Visual Effects Review

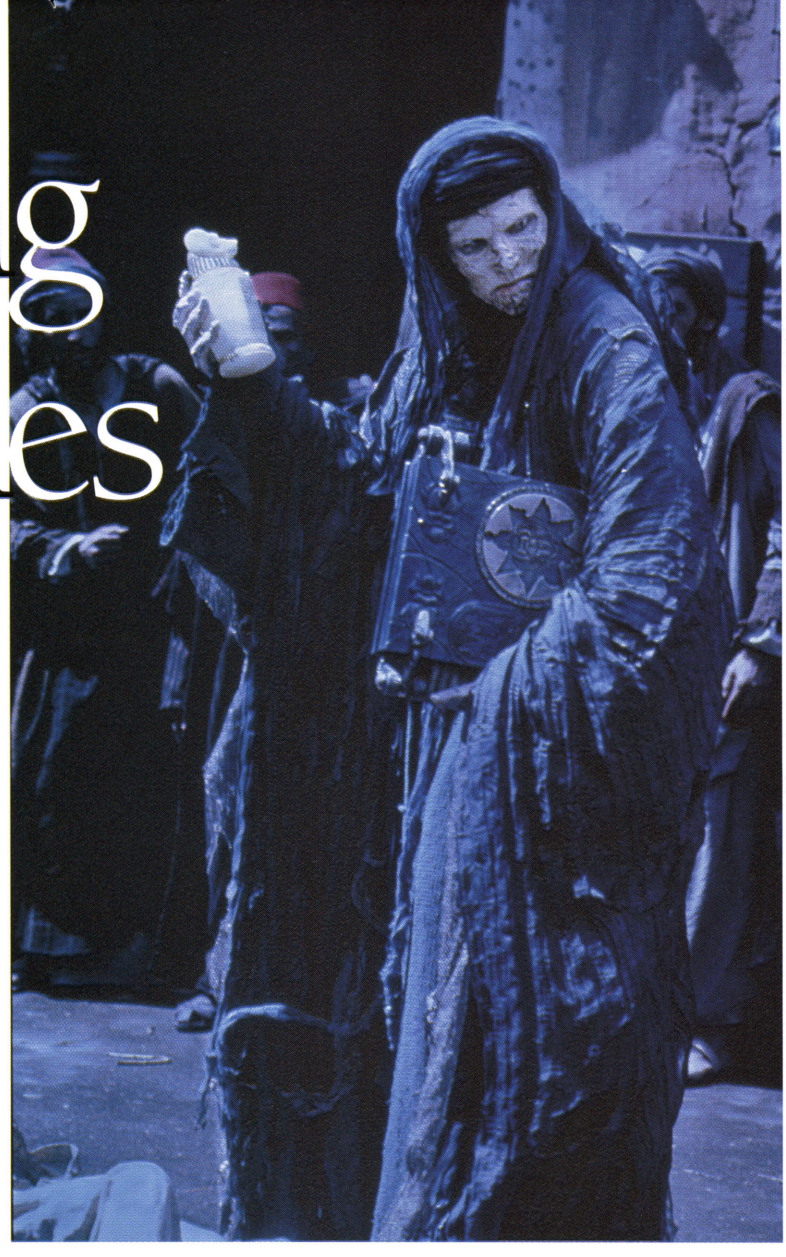
A sampling of some of 1999's most intriguing work:

THE MUMMY

MYSTERY MEN

INSPECTOR GADGET

Raging Rags and Bones



Effects experts give *The Mummy* a modern, high-tech makeover, using digital methods to create a convincing and *very* cranky cadaver.

by Ron Magid

Unit photography by Keith Hamshere

Director Steve Sommers's hip remake of *The Mummy*, shot by Adrian Biddle, BSC, is a *Raiders of the Lost Ark*-style adventure, in which the 3,000-year-old Imhotep seeks revenge on the grave-robbers who plundered his tomb. Industrial Light & Magic created more than 140 shots depicting sweeping desert sands, Biblical-style plagues and a digital mummy, while Cinesite handled an additional 60 shots involving sky replacement, unique 3-D elements, wire removals and other work. Pacific Title/Mirage supplied another 45 shots, plus the film's opening and end titles.

ILM's artists utilized legions of Silicon Graphics 0^2 and Octane workstations to revitalize the ancient Egyptian curse. "We've got just about everything SGI ever built," says visual effects supervisor John Berton, Jr. (*Terminator 2: Judgment Day*, *Jurassic Park*, *Men in Black*). "ILM has a total of 650 SGI machines, and on any given night, we could be rendering on hundreds of 16- and 32-bit Origin 2000 processors."

Thanks to some nifty ILM computer animation, Imhotep himself is unlike the lumbering mummies of yore. "This mummy is big, bad, fast-moving and scary, so it's not about bandages -- it's about this nasty creature," Berton says. "We used simulation techniques and procedural animation to make the bandages — along with cobwebs and hanging guts — a fundamental part of this mummy, which made him seem tremendously real."

Thanks to ILM, Sommers's mummy is actually far *less* than just a stuntman wrapped in gauze — audiences can see clear through Imhotep's desiccated flesh, a trick that demanded both total and partial digital models. The models were organically built from the skeleton up in Alias, using traditional wire-frame representations and fast-shaded graphics to "flesh out" the mummy's disintegrated CG form. "We didn't build every muscle in his body, just the most visible ones," says CG animation supervisor Dennis Turner, who led the team that constructed the film's ancient star. "His abs and lower back muscles were missing, but we built all of the leg muscles, from the ankle up to the hips and buttocks, and all of the

Photos courtesy of Universal Pictures.

upper torso muscles, including the shoulder, arm and neck muscles. Also, we built various mechanisms to simulate the way the muscles wrap around bones. We had to pay a lot more attention to the accuracy of human movement in order to make it look really cool. The sheer volume of material we connected — with all of the pushing, pulling, tugging, squishing and so on — added up to just a ridiculous number of pieces! It all had to hold together and behave in a very physical and believable way."

Much of Imhotep's animation originated from a rather sophisticated application of motion capture. "It was a very important part of our concept to do motion-capture with Arnold Vosloo, the actor who plays Imhotep," states Berton. "It wasn't a situation where we were saying, 'We'll get somebody else to do the mummy because Arnold's going to be done when he's finished with first-unit photography.' No, *this* was first-unit photography. We actually put Arnold Vosloo into the motion-capture suit and had him reenact all the movements he did in the background plates, so we had a baseline motion that *was* Arnold Vosloo. When you see this desiccated guy that's nothing but bones and guts walking around, he moves and acts like Arnold because he *is* Arnold."

In addition to using motion-capture data to drive Imhotep's baseline animation, ILM's animators could also control much of the CG mummy's movements procedurally; with the creation of a walk-cycle, the creature's muscles would flex believably under its decayed skin. As the living corpse regenerates, its moving bones, muscles and viscera are glimpsed beneath its splintered anatomy. Berton and his team used Softimage for body animation, ILM's Cari for facial animation, and Alias/Wavefront's Maya for particle simulations. Rather than animating the mummy's muscles over its skeleton to create movement, ILM's animators did the opposite. "All of the animation and motion capture was essentially applied at the skeletal level, and the muscles and sinews just followed suit," Turner explains.

Nevertheless, this hardly meant that the animators could simply point Imhotep in any general direction and start shooting. "We did a lot of tweaking in terms of the performance, because it's a movie," Berton says. "The animator is never secondary to the process, even though we did a tremendous amount of motion capture on the character."

In fact, the motion capture only provided the data to move Imhotep from point A to point B. ILM's character animators had to add in the shot-by-shot nuances. "There's a tremendous amount of character animation layered on top of all the motion capture and procedural animation," Berton observes. "Some of the hand gestures were drawn from Arnold's performance, but we enhanced them by adding more finger motion, which is very difficult to capture precisely. Obviously, his facial features were very difficult to capture, so those were all hand-animated. We worked those out by looking at [reference shots] of Arnold, and created whatever expressions that [director] Steve Sommers wanted to see in his face."

Having such flexibility is "actually the most interesting part about developing these kinds of procedural systems," adds Berton. "It's one thing to build a procedural system and follow a bunch of rules. However, the difficulty in making movies with that paradigm is that directors and other creative people want the freedom to create or change specific actions. Procedural animation has always been problematic in terms of doing visual effects. If the filmmakers say, 'I want a flock of birds to fly through this scene,' we'll pull up the 'flock of birds program' and fly the birds through. They'll look fine until the director says, 'You know, it would be great if those last two birds would glide down onto that tree!' The procedural system doesn't allow for that kind of change, because if you change one bird, all of the other birds change.

"For that reason, we've been working really hard here at ILM — and on this show in particular — to avail ourselves of all this procedural technology while still giving ourselves the ability to tweak it without busting it. We've achieved that by being able to layer our animation on top of motion capture and control the simulations and dynamics in a way that allows us to incisively say, 'We want this muscle to bulge more because it's in frame,' or 'We want to be able to see through the back of his head on this shot.' Those kinds of little changes give each individual shot a power that would otherwise be

Opposite: Imhotep was physically portrayed by South African actor Arnold Vossloo, who performed his role for ILM to allow effects artists to gather image-capture information — the basis of their digital incarnation of his character (this page, disintegrating in sequence).

masked if we had to rely on just the procedural system."

Creating procedural muscle animation was child's play compared to animating Imhotep's skin. For this delicate operation, Berton turned to ILM's John Anderson, a former professor of atmospheric and oceanic sciences who has since gravitated to the field of visual effects. Anderson's work includes developing the animation for fur, skin and soft bodies featured in *Mighty Joe Young* and *Star Wars: Episode I—The Phantom Menace*, but it's his foray into physically-based procedural skin for *The Mummy* that may well set a new benchmark for CG creature animation. Building on technology developed for the procedural animation of fur, Anderson and his R&D teammates, Vishwa Ranjan and Nicolas Popravka, applied the same approach while animating the mummy's more complex geometries.

Of course, the behavior of skin is difficult to re-create procedurally with CGI. "John Berton wanted the mummy to become the prototype creature for our development of physically- and procedurally-based skinning," Anderson says. "By using procedural models for the skin and layers of tissue that connect the skin to the muscles, we tried to build a creature that would have the tangibility of a real physical object. That allowed us to build a creature and skin him, then paint holes in the skin, through which we could reveal the muscles working under the skin."

Adds Berton, "We used volume rendering and volume analysis techniques to figure out how the skin should form around the muscles. That way, the skin was forming over the top of the muscle [in a way] that made sense, rather than just wrapping directly onto the shape of the muscle. The skin wasn't conforming just to the geometry of the muscles, but to the entire geometry of the volume of the arm, if you will — it's sort of a virtual subcutaneous layer. Really tremendous technology allows us to do that volume analysis, and then we stretch the skin over the top of that, so everything reacts to the muscles' movements."

To complete the effect of a 3,000-year-old mummy walking around of its own volition, ILM's artists applied various texture maps to their Imhotep animation. "We used our techniques for mapping all of these different features — color, texture, specularity, opacity, transparency — onto the top of that whole paradigm, which resulted in an incredibly rich-looking character," Berton says. "When he moves, all of the bits and pieces move in a reasonable way. We also painted in another level of detail moving in concert with this whole procedural system, which added realism."

During the first two stages of Imhotep's evolution from corpse to human form, the bandaged villain is completely digital. ILM faced its greatest challenges, however, during the character's later half-human/half-mummy stages. Makeup maestro Nick Dudman's prosthetics had to be layered *over* actor Arnold Vosloo's face, as computer graphics appliqués dug *into* the actor's features. "Basically, if you use prosthetics to build something like this, you have to build out the face of the character," Berton says. "We wanted to dig in, so there are places where it's Nick's makeup and places where it's our makeup. Since Arnold wasn't into having us rip apart his face just for one movie, we used computer graphics to change the topology of his face and create indentations and holes so we could see into his jawbone and so on."

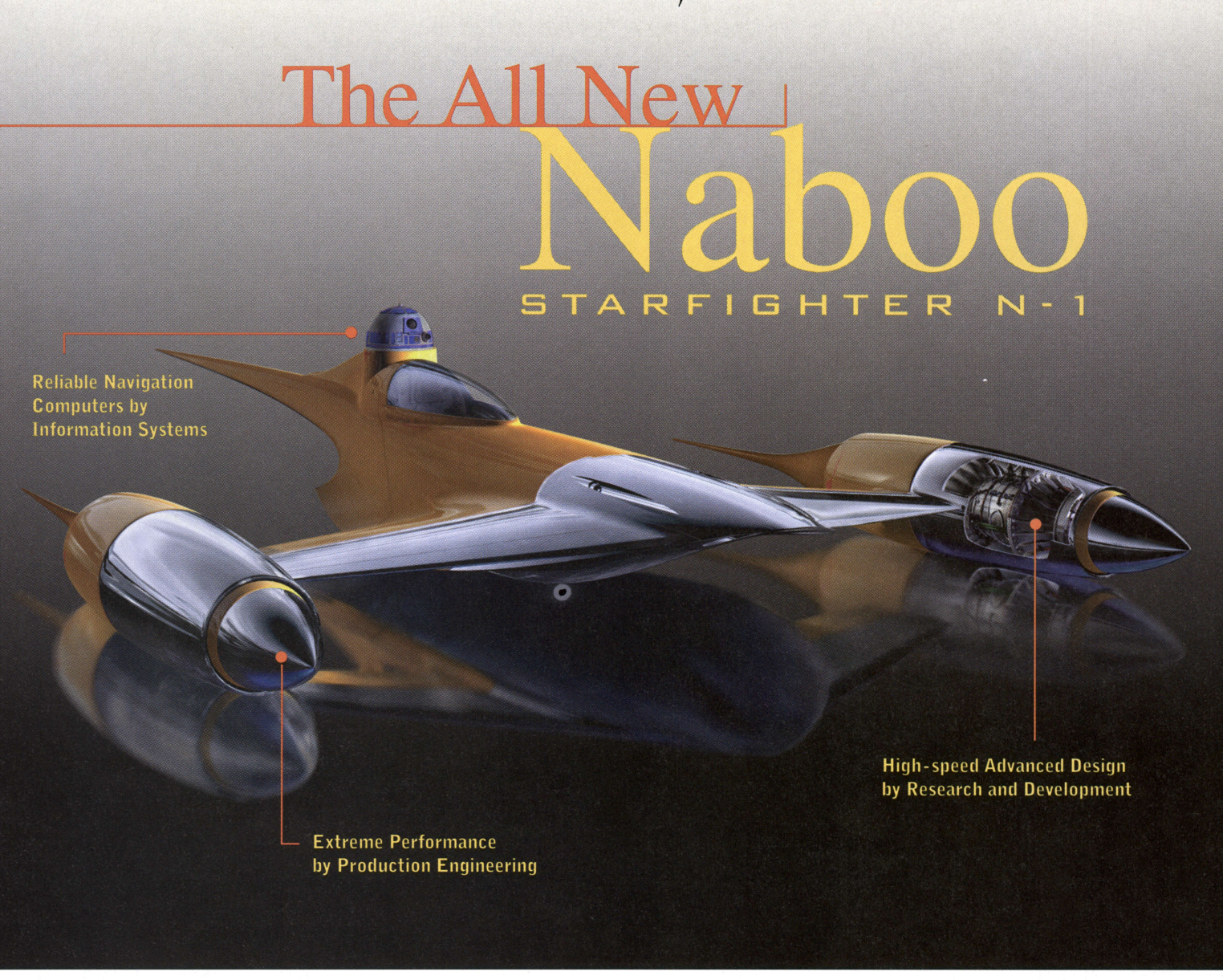
To create an invisible seam between Dudman's makeup and ILM's digital technology, Berton's team had to develop more sophisticated tracking tools to ensure that their digital damage wouldn't slide all over the actor's face — no matter how dramatically he turned his head. "There are more muscles in the face than just about anywhere else on the human body, so we can't track a face that finely yet," Berton admits. "[As tracking marks,] we used everything from little pieces of tape to finely-crafted LED markers that show up more brightly in certain directions than they do in others. We then used our computer programs to sort out movement in three-dimensional space, which worked up to a point. We're talking about some incredibly subtle facial movements, so we turned the job over to our camera match-movers and our match-animators, who visually matched our computer graphics to Arnold Vosloo's very delicate facial movements. Once you begin working with somebody's face — the place where an actor really brings something to the screen — you realize that computer graphics has its limits. You find out how much eight bits can really do, and it's not much compared to reality!"

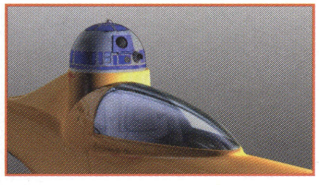
Once Imhotep regains his strength, he breathes life into an ancient curse by infesting Egypt with an outbreaks of various plagues. Computer-graphics supervisor Ben Snow oversaw a team of ILM artists charged with producing these pandemic menaces.

Snow, whose credits include *Twister* and *Deep Impact*, details, "We had several teams that created a lot of the big effects that the mummy conjures up. Just in terms of 2-D or 3-D non-mummy shots, we did 80 or so effects involving sandstorms, flies, locusts and other nastiness."

Much of this pestilence was generated with plug-ins that ILM created for Renderman and the new Maya software's highly flexible particle system. "Instead of rendering particles to create plagues of flies and locusts, as well as hordes of scarab beetles, we created a more swarmlike action," Snow explains. "Once we had that animation in particle form, we'd use a technique called 'instancing

The All New Naboo STARFIGHTER N-1





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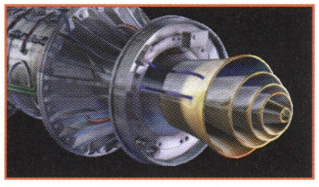

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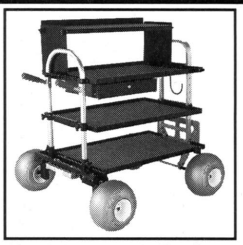

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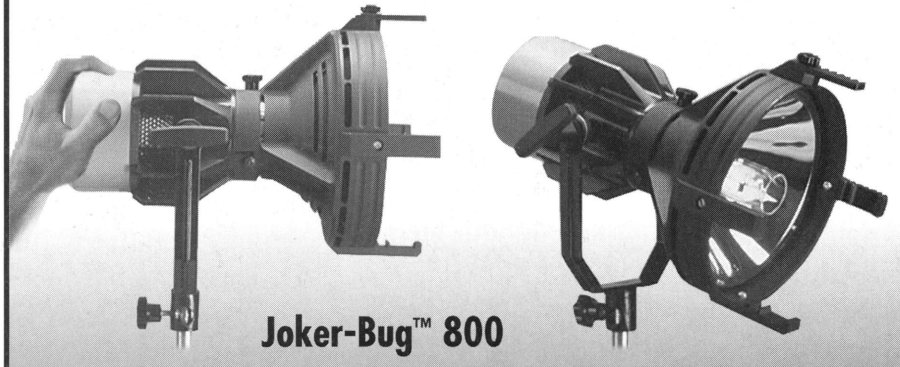

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geometry' to replace each particle with a little model of an insect. Through instancing geometry, the particles can be replaced by complex, animated objects. For instance, an animator would create a run cycle for the scarab, and we'd then apply that animation to the moving particle. Of course, if the particle went up a ramp, we had to make sure that the scarab would orient itself to the ramp so it would crawl at the correct angle. Also, the flies and locusts had to bank as they turned corners. We used different qualities of insects depending on how far away they were. We might just use little particles when they're way back, then drop to a sort of low-resolution geometry in the mid-ground. As they got closer and closer, we'd go to higher and higher resolutions."

The film's environments are also eye-catching. Cinesite was charged with creating a spectacular sequence in which a fiery hailstorm engulfs 1925 Cairo. "The shot is 201 frames long and [features] over 100 elements, including matte paintings, miniatures, 3-D buildings, 3-D hail, 3-D fires, practical palm trees, a practical rolling-cloud plate and various other elements," says Cinesite digital-effects supervisor Kevin Lingenfelser. "It was filmed out as one continuous cut, and then 'double-cut' into the film. The first cut has digital roiling clouds, two Nile River fire impacts, a pyramid impact and several distant fires. The second cut has everything but the kitchen sink! We destroyed all three of the minaret and dome miniatures built for that shot." (Pacific Title/Mirage also contributed to Cairo's convulsions, adding digital camera shake to 43 shots — in sync with the background's falling debris.)

Of course, Imhotep himself is the star of the show. Thanks to the very latest advances in motion capture and animation, he stands as the closest approximation yet of a fully digital human. ■

Handy in a Crisis

The robotic Inspector Gadget (Matthew Broderick) seems surprised by his unusual dexterity — an effect created by Stan Winston Studios, practical effects expert Peter Chesney, and Dream Quest Images, who animated and composited the 3-D digital bubbles.

Inspector Gadget boasts a hero with an array of tools that would make even the Swiss Army's knifemakers envious.

by Ron Magid

In the wacky world of *Inspector Gadget*, the titular character functions as a sort of one-man secret-agent organization: his arms and legs telescope to outrageous lengths; his head cracks open to reveal everything from an umbrella to helicopter rotors; and his Swiss Army knife-like hands can generate a corkscrew, telephone or any other device at a moment's notice.

Based on the famed children's cartoon series, directed by David Kellogg and photographed by Adam Greenberg, ASC, this live-action comedy needed plenty of effects work to re-create the source material's comic-book zaniness. Toward that end, producer Jordan Kerner (*George of the Jungle*) hired a coterie of ingenious gadget-meisters, including Stan Winston Studios (*Terminator 2: Judgment Day*, *Small Soldiers*), practical effects expert Peter Chesney (the *Nightmare on Elm Street* series) and digital-effects house Dream Quest Images (*Mighty Joe Young*, *Armageddon*.)

Actor Matthew Broderick, who plays Gadget, had to literally become one with the picture's special and visual effects. "Matthew had a difficult task, and he brought so much to the role," enthuses Dream Quest's visual effects supervisor Richard Hoover, an Oscar nominee for *Armageddon*. "In certain sequences, Stan Winston would attach a practical arm or a hat to him, which would only go so far. We'd have to go the rest of the way digitally, so we'd remove all of the [practical rigs] and set up a greenscreen. Meanwhile, Matthew had to carry his performance through while dealing with all of those different kinds of effects in one scene — or even in one line of dialogue! We really beat the hell out of Matthew."

Given that Gadget is the rare investigator whose cases aren't strictly hush-hush affairs, the effects work didn't have to be invisible. "This is Inspector Gadget — the guy is a walking special effect!" notes Stan Winston. "The project provided a chance for everyone to showcase what they do, and to put the effects right in your face. It's a simplistic artistic vision, which helped us in some ways and made things more difficult in others."

Winston's effects supervisors, Shane Mahan, Chris Calhoun and Alan Scott, had their hands full fashioning Gadget's intricate array of technical specs. "We made full replicas of Matthew Broderick's body, face and hands," says Winston. "In one way or another, many of the accoutrements of Inspector Gadget and his alter ego, Robo-Gadget, were created here in our shop. We completely designed the look of the characters' bodies under their clothes. We also did all kinds of hand gags — the telephone hand, the lighter hand, a corkscrew and also a 'Swiss Army-knife hand' — where every finger is a different tool. We also created the villainous Claw's claw and all of his other artificial hands."

Generally, Dream Quest's work served as the midpoint between Matthew Broderick and whatever gadget would "emerge" from the

Photos courtesy of Dream Quest Images.

Handy in a crisis

A combination of CG and practical effects blend perfectly to depict Gadget in flight. The plate photography was done in VistaVision, utilizing a SpaceCam rig flying over the Pittsburgh cityscape.

actor, while Winston's work represented the endpoint. A case in point is a sequence in which Gadget grows a pair of 14'-long legs in order to pursue an escaping limousine containing Robo-Gadget. The scene began with Winston's practical effects, but quickly became digital in nature. Notes Hoover, "Stan built full-scale 14' legs, which we used for close-up shots of the legs actually running and the feet hitting the street." For longer shots, however — as well as images of the legs telescoping out of Gadget's pants like twin aerials with shoes and socks perched incongruously on their ends — CGI was the only way to go. Hoover adds, "We replaced Matthew's legs totally with CG pants using Alias/Wavefront's Maya Cloth program, so he was CG from the belt down."

Making Gadget run fast enough to catch a speeding limo was more difficult to map out. Hoover explains, "We first shot background plates from a camera on an arm going down the street. Then we did animatics to approximate how fast Gadget needed to run to look as if he was gaining on the car moving at about 40 miles per hour. We figured he had to be running at about 50 miles per hour on these stilt-like legs. Fortunately, when you have a character on 14' legs, his legs don't really have to move that quickly to get going that fast. His strides were over 20' in length! After we laid all of that out, we put a grid on the animatics so I could see how many strides he needed."

Getting Broderick to believably behave as if he were walking on 14' legs wasn't a walk in the park either. "We did a lot of experiments to determine how to get Matthew's body language to make sense," admits Hoover. "If you're 14' up in the air, the way you think about what you're going to do changes. There's a level of discomfort or uncertainty that's comedic, which we wanted to convey in his performance.

"To help capture that feeling, we put Matthew on a treadmill against greenscreen — on stilts. Not 14' stilts, but 2' to 3' stilts, so his legs and his body would move as if he was [treading] on something foreign to him. Obviously, I couldn't get Matthew to run 50 miles an hour on 3' stilts! We harnessed him on hip wires from above, so he would always be safe, and had him running in place on the treadmill. Then we used a motion-control camera to move by him very fast, which gave the appearance of Gadget moving forward through the frame, even though he was really running in place.

"We put tracking markers on his real pants, so we could see his actual leg and hip motions, and then played that against our animatics to make sure that his leg speed, torso speed and timing were right. After tracking his movements, we animated digital legs that matched the ones made by Stan Winston. We also did a lot of manipulation with the live-action plate, in terms of his up-and-down body movement and even his scale in the shot. We positioned him forwards and backwards to make it really feel as if he had those legs on. It's a fun shot."

In a related sequence, Robo-Gadget goes on a Godzilla-like rampage of pyromania, shooting flames from his hat as he stomps through the city on his 14' legs. (Robo-Gadget is also played by Broderick, who wore an identical Inspector Gadget costume that incorporated a few sinister changes, such as solid black contact lenses and eerily straight prosthetic teeth, courtesy of Stan Winston Studios.) The flame-thrower and interactive fire effects were handled by Dream Quest. Hoover recalls, "Peter Chesney took an actual World War II flame-thrower up in a high basket, because Robo-Gadget was supposed to be on his extended legs, and we shot the flames against black material on the Disney backlot."

After Hoover produced his fire element, he once again put Broderick on stilts against greenscreen, this time with the actor executing dinosaur-like motions. Dream Quest's artists then added 14' legs and digitally deployed a flame-thrower emerging from Robo-Gadget's hat. Finally, to make it appear as if the villain is truly on a destructive rampage, Dream Quest's compositors matched Robo-Gadget into a plate shot in a downtown L.A. alleyway. While hundreds of extras dressed as mariachi singers and other panicked onlookers ran off screaming, Chesney cued pre-rigged garbage cans to explode around them. "Our compositing artists could then hook up the flame element and matte it in so it looked as if Robo-Gadget was firing the flame thrower, hitting the garbage cans and making

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Handy in a crisis

Gadget's souped-up Lincoln convertable proves to be as adaptable as its owner, thanks to CG animation by Dream Quest Images.

them explode."

Robo-Gadget's arsenal of weaponry also brought about some severe complications in terms of credibly melding the character into an environment. "There's a scene where a little kid runs up to Robo-Gadget and asks, 'Inspector Gadget, can I have your autograph?' and he says, 'You got any money?'" Hoover recalls. "When the kid says 'No,' Robo-Gadget deploys every vile weapon he has in his hat, including chrome surgical knives, spikes, a sawblade, big scissors, and a little black ball that says 'Bomb' on it with a little fuse burning — a lot of objects mostly made of reflective chrome. So we shot spherical 180-degree photos of the environment, which we could texture-map in so the reflections would be accurate. You can even see a reflection of the kid in a round joint on one of the armatures that come out of the hat. Most people probably won't even notice it, but if you look hard, you'll see it."

Stan Winston Studios and Dream Quest collaborated on a hilarious sequence in which Gadget's headgear sprouts helicopter rotors, taking him on a aerial tour of the greater metropolitan Pittsburgh area. Hoover explains, "Winston built a mechanical hat whose top opened like a camera iris, but it was a little bulky, and you could see all the leaves. The director wanted the seams to be invisible, and to just magically appear. We therefore shot plates of Matthew wearing Stan's helicopter rig on his head, flying from wire rigs above our huge green-screen stage. After that, we painted the prop out and animated its deployment using CG. Once deployed, we handed the action off to Stan's rig. That way, Matthew could really grab the handlebars and feel the prop on his head as he went sailing through the frame. The blades turned on Winston's helicopter apparatus, but we couldn't use real blades because Matthew was hanging from wires. Instead, we created some digital helicopter blades."

Background plates for the sequence were shot from a SpaceCam Systems helicopter flying over Pittsburgh. "After we chose the best plates for the sequence, we scanned them in at Dream Quest and tracked them," Hoover says. "Then we loaded that data into our motion-control camera onstage, so that when we 'flew' Matthew on wires, every motion-control pan and tilt would match what SpaceCam did in the background plate."

The scene marks Inspector Gadget's first try at deploying his helicopter-hat, and the secret agent quickly loses control: after revving the throttle a bit too fast, he abruptly shoots up in the air, while easing down on the clutch causes him to fall precipitously. In one jaw-dropping sequence, Gadget plummets a staggering 600' down the side of a building. This stomach-churning descent called for the use of SpaceCam's remote-control descender rig and in-house motion-control VistaVision camera on location in Pittsburgh. Operated by SpaceCam president/designer Ron Goodman, the rig traveled from the top of the building to within 30' of the ground in just 10 seconds, while the camera itself was placed 15' from the side of the building. (See further details on this device in *AC* June '99, page 62.) To complete the effect, Dream Quest's animators added subtle plumes of CG exhaust that perfectly coincided with each throttle crank. Artists also projected Gadget's shadows on various buildings, and his reflections in windows, as he flew down the street.

As Dream Quest increased its involvement on *Gadget*, the intense amount of rig and wire removals skyrocketed the number of effects shots to a total of nearly 300. "There were lots of hand-offs between stunts and Peter Chesney's team, who did a lot of rigging," Hoover insists. "We probably have 130 really big digital shots, but a lot of the other rig removals were also difficult, because we had to make all of Gadget's antics look as real as possible."

Since comedy is all about timing, even live-action shooting, with its plethora of takes, can eat up the production schedule. Given the malleability of digital effects, it's conceivable that a shot or sequence could be tweaked ad infinitum to achieve the ultimate comic effect. Producer Jordan Kerner had to factor such digital retakes into his budget. "Comedy is much harder than doing drama, because in drama, you can always cut around to create timing," Kerner maintains. "Comedy requires the right expression, the right reaction and the right physical speed. What's critically important in the visual effects arena is that we have three or four different performance takes in the greenscreen unit before moving on. Fortunately, we can put a greenscreen composite together in the Avid and look at it on the set. If it doesn't work, we can shoot another greenscreen element, because we haven't paid for the composite yet!"

Having successfully added every type of gee-whiz effect to Inspector Gadget's escapades, Hoover believes that audiences may be in for a treat. "People are going to be surprised how action-packed this movie is," he predicts. "Gadget goes through all kinds of antics. There's lots of wonderful stunt work, and some complicated digital and practical gags which look very simple — that's the beauty of the movie." ■

Not-So-Super Heroes

In *Mystery Men*, amusing visual effects underscore the offbeat environs of some wannabe champions of truth and justice.

by Ron Magid

Being a superhero in the late 20th century is not an easy assignment. All of the best names and gimmicks have already been co-opted by such classic stalwarts as Superman, Batman, and the Fantastic Four, or by more modern iconoclasts like The X-Men, Spawn, and Hellboy.

Based on the famed anti-comic book of the same name, *Mystery Men* (directed by Kinka Usher and photographed by Stephen Burum, ASC) tells the saga of a band of would-be heroes endowed with less-than-super powers: Mr. Furious (Ben Stiller) can whip up a storm of unadulterated rage; the Bowler (Janeane Garofalo) wields a transparent 10-pin ball that contains her father's skull; the Shoveler (William Macy) transforms spadework into a superhuman force; the Spleen (Paul Reubens) vents noxious gas from his nether regions; the Sphinx (Wes Studi) disarms enemies by babbling New Age pabulum; the Blue Raja (Hank Azaria) specializes in throwing silverware; and Invisible Boy (Kel Mitchell) is transparent only when nobody is looking.

Though these peculiar paladins would be no match for the Justice League of America, *Mystery Men* does boast an impressive lineup of effects artisans. Visual effects supervisor Lori Nelson (*Matilda, Dante's Peak, Virus*) handled more than 230 shots at four effects houses to generate the film's appropriately deranged imagery.

Pacific Ocean Post oversaw 137 shots, many involving the creation of the heroes' hometown, Champion City, along with much of the compositing and the Bowler's bowling-ball effects. Meanwhile, Rhythm & Hues delivered 66 shots, tackling the other protagonists'

The Mystery Men sub-superheroes include (from left) the Shoveler (William H. Macy) the Blue Raja (Hank Azaria), the Sphinx (Wes Studi), Mr. Furious (Ben Stiller) the Bowler (Janeane Garafalo) and the Spleen (Paul Reubens).

Photos courtesy of K Media Relation.

Not-So-Super Heroes

Various views of the fictional Champion City were rendered by extending actual Los Angeles locations with miniatures built by Grant McCune and digital matte paintings created and composited at Pacific Ocean Post.

powers, as well as the deadly Frakulator beam unleashed by psychotic arch-nemesis Casanova Frankenstein (Geoffrey Rush), while Grant McCune provided some cool miniatures, and Vision Arts and Illusion Arts also contributed to the project. "*Mystery Men* is not like a big visual-effects movie — it really stands up without them," Nelson insists. "Our visual effects are just augmenting a very funny comedy and a great cast."

One of the film's foremost challenges was building Champion City, the bizarre metropolis where *Mystery Men* takes place. Nelson explains, "Champion City is a nonexistent place created by POP's Deak Ferrand [*What Dreams May Come*], who used pieces of different cities around the world, as well as matte-painting elements."

Ferrand co-designed the fictional burg with the film's production designer, Kirk Petrucelli (*The Thirteenth Floor, Blade*), who dressed downtown Los Angeles locations with neon and other design elements for the production shoot. Ferrand then echoed this plan in his digitally matte-painted wide shots. "Kinka [Usher] didn't want this movie to be futuristic," Ferrand relates. "Instead, Champion City is a contemporary-looking blend of Hong Kong, Paris and Moscow. I tried out that mixture and added other huge structures with bells, similar to Thai temples, and created some giant megamalls. In the final design, you can see layers of all these structures built on top of the older parts of the city, which is on an island linked by a series of bridges to the suburbs on the mainland. Most of the people who work in Champion City commute over theses bridges from the suburbs."

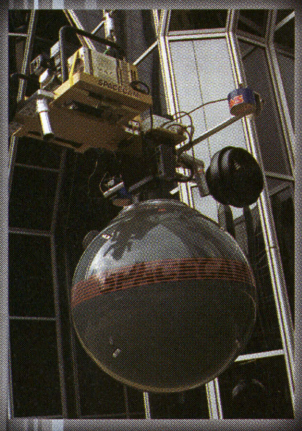
One of the film's most ambitious shots involved a vertical boom beginning on a close-up of the license plate on Casanova Frankenstein's car as it drives across one of these bridges. The shot then pulls back to reveal the entire cityscape ahead. Originally, Nelson intended to achieve the Champion City vista with some live-action photography of the car on a road combined with a digital matte painting of the city. "Lori [Nelson] originally wanted to shoot the live-action car on a straight road with a truck-mounted crane, beginning on the plate and then just craning up," Ferrand recalls, noting that the bridge and city would be added later.

Nelson adds that she believed it would be necessary to use a real car in the shot because it would be difficult to fool audiences with a CG vehicle, stating, "People know what cars look like and how they move, so it's hard to make that illusion work."

"Unfortunately, the biggest crane we could find didn't meet the demands of the shot," Ferrand says. "POP then presented the idea of doing the shot entirely in CG, including Casanova Frankenstein's car and the road on the bridge. It was an ambitious idea."

Indeed, and Ferrand discovered just how ambitious such an idea was after his attempt to build the 3-D bridge with Frankenstein's car on it, and then add a conventional 2-D matte painting of Champion City in the background, which was revealed as his virtual camera boomed upward. Ferrand admits, "Moving off this fully volumetric bridge with 3-D cars and a 2-D vista at the end didn't work at all." (The 3-D portion of the shot was handled by senior CG animator Martin Lauzon).

The shot's added complexity demanded a sense of multiple 3-D perspective shifts over an extremely wide and detailed vista. Thus, Ferrand attempted to project his 2-D matte painting of Champion City



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Not-So-Super Heroes

onto a series of cubes that corresponded to the size and shape of every building in the painting. "By projecting my matte painting through a virtual camera onto cubes, I can move in three dimensions within the painting," Ferrand says. "I modeled really rough 3-D shapes of all the buildings, and then painted the matte with all of the textures over that. I did only one render of that image, and used Softimage's projection plug-in to reproject the matte painting onto the same geometry of the rough model — which was cool, because it matched perfectly. I then moved the virtual camera over that. However, as the camera moved, I also had to paint in whatever was revealed behind the buildings. It wasn't just one matte painting, but more like 20. Still, that technique made a complicated shot very quick to render, because I didn't have any virtual lighting or 3-D shadows. At the end, I hand-painted the shadows and other things the shot needed."

Two more volatile areas in Champion City's landscape were built as traditional miniatures by Grant McCune: the lunatic asylum from which Casanova escapes, and the mansion where the villain takes up residence. The asylum's destruction demanded the use of a 1/8-scale and 1/24-scale model, and was performed by demolition expert Ian O'Connor, who also handled the implosion of Casanova's manor. POP's senior matte painter, Rocco Gioffré, created all of the digital matte paintings for the mansion shots. Most are extensions, while one is a full matte painting.

The nastiest discharge to hit Champion City, though, is Casanova Frankenstein's Frakulator ray. "The Frakulator looks like a Southern alcohol still with a rocket engine attached," Nelson explains. "It's ridiculously huge, and it comes down to this little, teeny-tiny point. Casanova keeps it in the basement of his mansion, below a disco dance floor that irises open. This huge beam just shoots past a mirrored disco ball, out through the roof and up into the sky. When the Frakulator is fired, everything — from people to buildings — is fragmented and warped into this state that reflects what's going on within Casanova's maniacal brain."

After being "Frakulated," people and objects are reduced to modern-art masterpieces. "It's a combination of Francis Bacon meets *Nude Descending a Staircase*," states Rhythm & Hues visual-effects supervisor Tom Leeser. "Production designer Nick Pugh was instrumental in coming up with the look and feel of the Frakulator effect. Luckily, we had some preproduction R&D time, and we used it to brainstorm."

For shots in which the Frakulating effect hits Champion City, R&H had to apply the Frakulator to 3-D CG models, surrealistically displacing whole sections of architecture. "The portions of the city that aren't affected are the 2-D matte-painted background and practical foreground plates, but it made more sense to use a more 3-D CG approach for the 'Frakulated' city," says Nelson.

R&H's effects artists decided that the Frakulator would cause massive perspective shifts within every given shot, causing a radical distortion in every 3-D object. "We wanted to move the city around in an impossible way," Leeser says. "We tried to apply an organic look to the rigid, inorganic aspect of the architecture. Thus, while the buildings are distorting, they're not distorting to the same extent as organic objects, like the people within the city. We've employed a technique of incorporating multiple perspectives into the scene, generated from one perspective. As the buildings are distorting, we're introducing multiple-point perspective within the image. A good analogy would be a cubist landscape, where distortions happen to the

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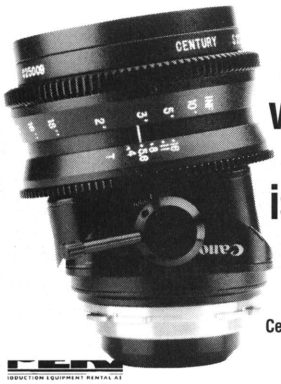

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Not-So-Super Heroes

buildings over time. Imagine an image that starts out being shot with one camera and one lens, but then the buildings within the landscape suddenly start shifting around to such an extent that we have multiple vanishing points. The buildings themselves take on different perspective characteristics."

Of course, what the Frakulator beam does to architecture is nothing compared to its effect on human beings, as it totally twists facial features into Picasso-like renderings. Notes Nelson, "Faces become jumbled, and everything changes location and placement — eyes and noses move, mouths open, and teeth start to grow, change and morph."

Adds Leeser, "Instead of using the basic cubist concept of multiple planes in still images, we wanted to show these multiple planes moving in multiple perspectives. To do that, we created models of key targets that we wanted the effect to hit during the process. They were life-size depictions of the different progressions the characters' faces would go through, sculpted in clay then digitized — those become our keyframes."

Once these models were digitized, R&H's animators interpolated the in-between frames and applied metamorphosing dynamics over them. With this new twist in effects work, conventional controls for particle systems are applied to 3-D models. "We're morphing between the physical three-dimensional sculptures we made as the dynamics are being applied," Leeser says. "To accomplish that, a lot of proprietary programming work was required. We had to link up a lot of software that weren't designed to work together."

The finished film is certainly imaginative, which was exactly the tone sought by director Usher. "I'm really excited about *Mystery Men*," Nelson says. "Its effects are totally new and different — they're unlike anything you've ever seen before." ■

Cinematography's Computer Age

Cinematographers and visual effects experts assess the impact of digital technology on the creative process.

by Stephanie Argy

Over the past 15 years, computers have transformed nearly every aspect of motion picture work. This is most evident in the postproduction phase, which has been completely revolutionized — from editing to visual effects to sound design. However, the technical process of cinematography — especially in feature films — has remained essentially the same for decades. Film rolls through a camera, recording light bounced off the subjects in front of it. The film is then run through a chemical bath, and prints are ultimately struck from duplicate negatives and sent out to theaters.

The process has matured and improved greatly since the turn of the century, but would still be recognizable to such cinematographic pioneers as George Eastman and William Friese Greene.

Now, however, new tools for cinematographers may further integrate their craft with digital technology. "The landscape is definitely changing, and it's changing very quickly," says Caleb Deschanel, ASC. "Where things will end up in the shakeout, it's very hard to tell." As with any change, of course, the move into a digital world presents both advantages and dilemmas.

Cinematographers will have new methods at their disposal, but their way of working will have to evolve as well. They also will need to make themselves aware of a broader range of information, particularly the ins and outs of the visual effects business. "You have to understand every stage of it," agrees Allen Daviau, ASC.

Some now predict that within a few years, the entire film chain — from production to post — could become digital. So far, most attention (and the accompanying hype) has focused on the two ends of that chain: high-definition cameras for initial image capture and digital projection for theatrical exhibition. Yet other digital tools on the horizon are equally important to the cinematographer's day-to-day work.

One of the most promising is the "digital intermediary," a process of digitizing filmed images so that they may be manipulated in a manner analogous to telecine work, and then recorded back out onto film or stored on a digital medium. Cinematographers whose filmed images are seen on video have long been able to use the telecine bay, and its many tools, to precisely control the color and contrast of their work. Until now, however, feature-film cinematographers have had to rely on traditional photochemical techniques to make those kind of corrections. Although photochemical processes have been refined and are time-tested, they offer less control than digital techniques, and the lab work involved means that cinematographers must wait longer to see their results.

Cinematography's Computer Age

Cinesite, a visual effects facility that is a subsidiary of Eastman Kodak, has been very active in the development of the digital intermediary process, using techniques which were pioneered on the movie *Pleasantville* (see *AC* Nov. '98). That film, photographed by John A. Lindley, ASC, featured a black-and-white world that gradually shifted into color. To make the transition possible, every frame of the movie was digitized and then manipulated to precisely render color, as dictated by the story. The work was supervised by Chris Watts, who performed tests at other facilities before bringing the job to Cinesite.

Now, Cinesite is offering the same digital intermediary technology to the open market, and presenting it as a valuable tool for any cinematographer. "The growth of digital intermediary work is going to get the attention of everyone who shoots motion pictures," says Daviau. "It's going to mean a lot more than a digital intermediary for effects work. It's going to work exactly as it does in lab procedures, except that now we're going to have a wonderful digital tool." Daviau adds that the digital intermediary process will offer cinematographers all of the options and controls that they're used to from doing telecine work, in terms of color, contrast and density control.

To create a digital intermediary, Cinesite scans selected footage on a Philips Spirit DataCine, at about four frames per second. Currently, scanning an entire feature would take about three days, according to Forrest Fleming, vice president of Cinesite's scanning and recording division. When recorded at 2K resolution, each frame takes up about 11 MB of storage, so a full feature at 2K would require about two terabytes of storage space. The image manipulation is then done on a da Vinci color corrector. Finally, when all of the image work is done, the movie can be recorded out at about eight seconds per frame.

Cinesite is also cooperating with cinematographer Curtis Clark, ASC on the latter's plan for a fully digital network that will transmit voice, text, graphics and video between studios, locations and post-production facilities. Clark's firm, NeTune Communications, plans to rely on satellites as the basis of its network, and will operate on two levels. First, according to Clark, productions will be able to create their own "intranet," which will allow everyone involved with the project to exchange information and images, at a rate roughly equivalent to that of a T1 line — enough for video conferencing, web-based telephones and low-resolution video images. For those who need still more bandwidth — in order to inspect critical visual images, for example — NeTune will offer a higher-level system, which will allow the transmission of high-resolution images.

Clark says that for cinematographers, the ability to transmit high-resolution images is the most important thing about his system, because it will allow them not only to see digital dailies, but also to communicate with visual effects artists and others during postproduction. "Filmmaking is an organic process," says Clark, who has shot such features as *The Draughtsman's Contract* and *Triumph of the Spirit*. "The NeTune system will enable people to be a bit more flexible in terms of how they coordinate CG and live action."

NeTune is now at the point where studio executives, directors and cinematographers are seeing full demonstrations, and Clark plans to bring the system onto working sets this fall for a series of beta tests.

Long an advocate of strong collaborations between cinematographers and visual effects artists, Clark is working closely on the project with Guy Griffiths, NeTune's senior vice president of digital production technologies, who recently joined the company from Cinesite. The duo believe that when the system is fully realized, it will also provide a way to prevent misunderstandings between the two communities and help them to interact more smoothly. At times during the last decade, friction has arisen between cinematographers, who consider themselves responsible for a picture's images, and visual effects artists, who handle those images after the initial capture phase. Daviau explains that the problems generally occur when a cinematographer feels that a change made to accommodate effects has altered the intent of the image. "It's this dialogue that has to keep going," he says. "It's one of the reasons that the ASC has always had effects people in our ranks."

Deschanel maintains that the industry's power structure has shifted, particularly in the case of effects-driven films. "The real footage that is actually shot is like brushstrokes," he says. "The cinematographer's work is becoming part of a mosaic. The weight is shifting more to production design, and to the editorial and visual effects house."

To retain a voice in the process, Deschanel says, the cinematographer must take the initiative to get involved with the visual effects artists on a project. "When we did greenscreen and bluescreen shots on *Message in a Bottle*, I would work with them on the balances," he says. "It's not traditionally the area that people think of the cinematographer being involved in." He maintains, however, that the cinematographer has to stake out that territory, or risk losing the opportunity to contribute. While he feels that cinematographers should be brought in to participate in post-related work, he concedes that this will require directors of photography to stay on a given project for a longer period of time.

Daviau says that early cooper-

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Cinematography's Computer Age

ation between the cinematographer and the visual effects team is also key. "They want to have us involved as early as possible, and we want to be involved as early as possible," he says. "It's not just the creative input on the look." It's equally important, he asserts, for the two sides to work together to figure out which effects shots would be best done digitally and which should be shot in-camera — decisions that can affect not only the budget of a production, but also whether the project gets made at all.

Recently, the number of big-budget visual effects films being made has plummeted, partly because studios are recoiling at the rising expense of the effects involved. "Estimating the cost of effects often scares producers away from doing a film," notes Daviau. "They need to explore alternate means of achieving the same plan."

Ray Feeney also views the visual effects industry's position as precarious. The founder of Silicon Grail and RFX, Feeney is a four-time scientific and engineering Academy Award winner for motion-control equipment, scanning and recording systems and bluescreen extraction software. His most recent endeavor is the Chalice compositing software. Feeney explains that the visual effects industry, always bedeviled by low profit margins, has gone through periodic lulls, generally ended by either a dramatic technological advance (such as the rise of computers as visual effects tools) or by a new revenue stream (e.g., the development of home video).

The industry is once again in a lull, but Feeney notes that this time around, nothing has occurred to foster new production. Unfortunately, the reduction in the number of effects-oriented features being green-lit means less work for everyone, including cinematographers. Also, since the connection between directors of photography and the visual effects community will become only more pronounced as digital technologies move into the camera department, cameramen will now need to stay abreast of the factors impacting the visual effects business.

Feeney is troubled by trends in the effects business that have led him to believe that the industry is at the *end* of an era, rather than the beginning. Over the past few years, he notes, many smaller effects houses have sprung up to compete with giants such as Digital Domain, Rhythm & Hues and Industrial Light & Magic. The problem, as he sees it, is that these small houses don't have the resources to manage the effects on a large project, yet large visual effects houses, unlike big companies in other industries, have little production advantage over their smaller rivals. In the car industry, for example, a large manufacturer has an edge over the hobbyist who puts a car together in his garage, because the car factory can build cars more cheaply than an independent craftsman. To Feeney, most of today's visual effects facilities operate more like collections of garage hobbyists who happen to work under one roof, because there is currently no way to better integrate their workflow.

Part of the difficulty, he explains, is that the rise of computers has changed the nature of vendors serving the film industry. As recently as 10 years ago, he says, most businesses that manufactured filmmaking gear did little else. Companies such as Arriflex, Fisher, Chapman, Panavision, Oxberry and Moviola had to be responsive to the needs of the movie industry, because if they weren't, they would go out of business. It's different today: while the visual effects industry is largely computer-based, it comprises a relatively small part of the market for computer manufacturers. As a result, says Feeney, those firms don't have to cater to the movie business with the same attentiveness as those in the camera/equipment business. ➢

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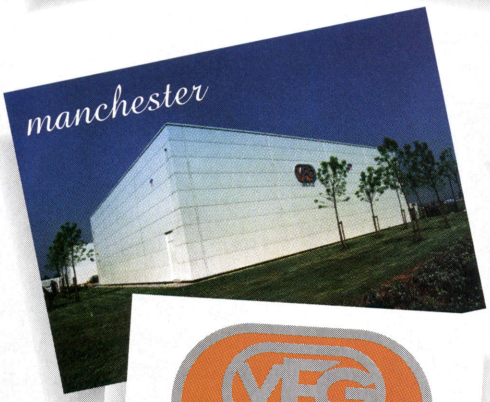

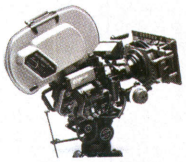

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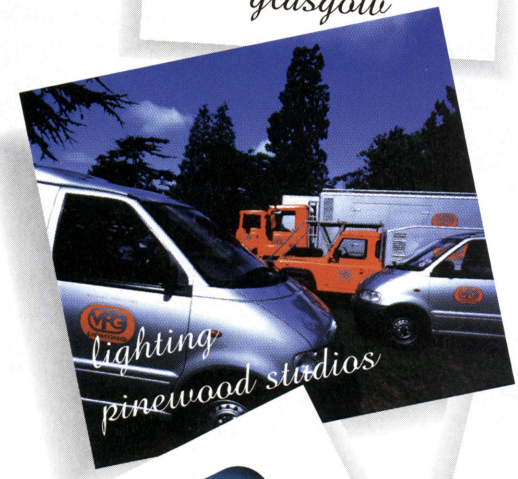

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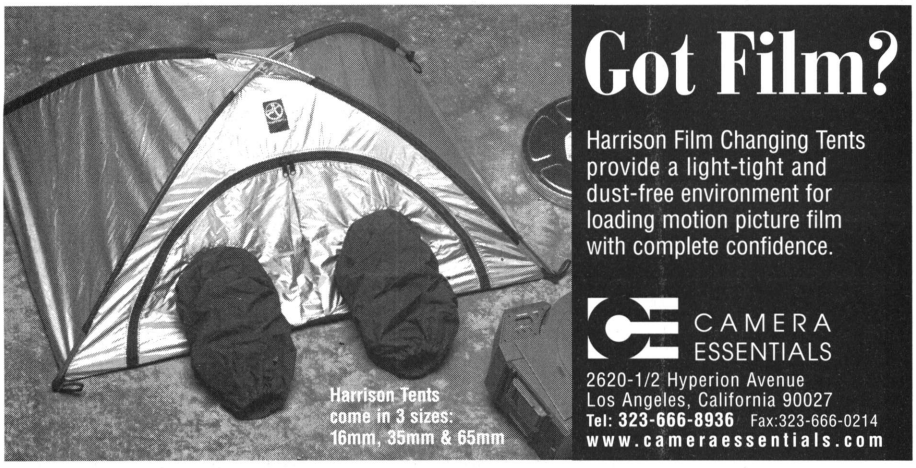

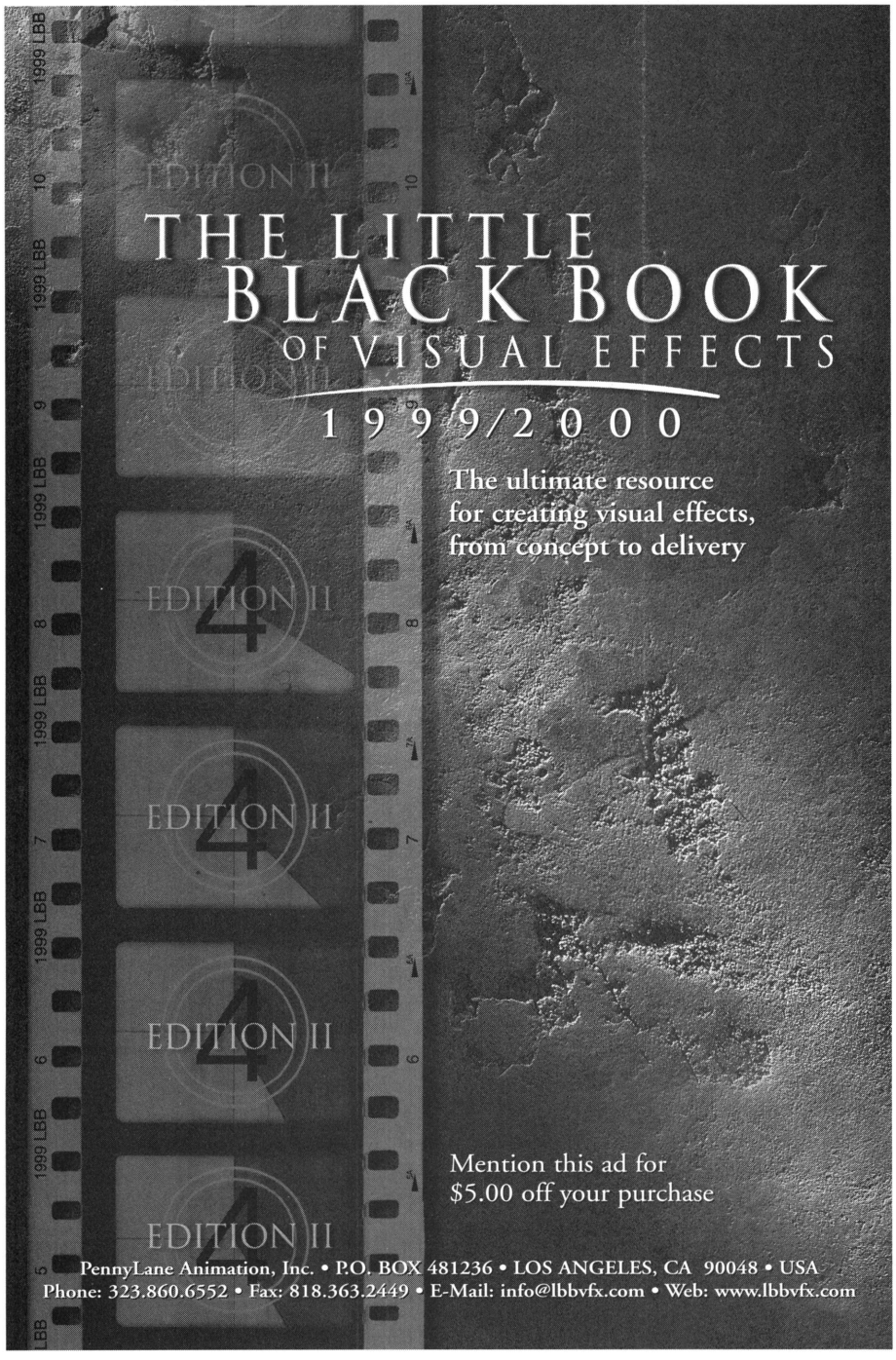

Cinematography's Computer Age

Of course, those who use computers have to communicate with the manufacturers in order to have their needs fully met. Jeff Benrey, the entertainment marketing manager for Silicon Graphics, says that about a year ago, the company realigned to focus on six main markets — one being entertainment. Benrey and other marketing executives spend time in the field with the company's entertainment clients, then relay comments and requests back to the engineering groups. Of course, SGI can't help much if clients don't ask for all that they want. "When people are in front of the computer, they think, 'There's only so much it can do.' They don't ask [for anything more]." He points out that demanding the impossible often pushes engineers to achieve it. "That's how we make improvements," he says. "Our entertainment customers push the limits of our computers, both on the visual side and on the computing side."

He adds, "You have to think of technology as being on your side, and then use it at will. What you get out of it is what you put into it. If you don't know why you're using [digital technology] — or if you buy lots of equipment and don't know how to use it — you can get into trouble."

Daviau feels optimistic about the ability of cinematographers to respond and adapt to the digital future that awaits them. "I feel that we've always changed our approach as the technology changed, just as times changed." He points out, however, that even if the cinematographer's work changes in its technical details, it will remain consistent in the most fundamental ways. "I still feel that a cinematographer's first objective is to sit down with the director and production designer and come up with the look of the movie," he says. "The job will be the same, but the emphasis and tools may be different." ■

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Elegant Chills

Creepy, classy and impeccably cinematic, the original 1963 version of *The Haunting* can still raise gooseflesh.

by George E. Turner

Most great movie directors are specialists whose reputations rest on the ability to make one specific kind of show better than anyone else. There's Hitchcock's suspense, for example, or Capra's populism, Lubitsch's sophistication, Wilder's wit, Sternberg's exotica, Whale's quirkiness, Ford's heroics and Witney's action.

Robert Wise's forte has always been excellence, without regard for genres or fads. His 39 films as a director have encompassed heavy dramas, musicals, Westerns, horror yarns, film noir, comedies, war stories, mysteries, costume spectacles and more — most of them done to the king's taste. Among these is one of the handful of great ghost movies: *The Haunting,* released in 1963.

This exceptional example of modern Gothic drama has none of

the grisliness now considered essential to any picture with sheer terror on its agenda. There is no attempt to "gross out" the spectator with loathsome, random butchery or rotting corpses — the picture generates maximum suspense and terror without leaving a queasy aftertaste.

Shot by Davis Boulton, BSC in widescreen black-and-white, *The Haunting* hasn't aged a minute, and can still elicit shivers and the occasional nervous yelp from any audience. Its ghost is neither man nor beast, but a *house.* A character in the film describes the demonic dwelling as "Diseased, sick, crazy if you like. A deranged house isn't a bad way of putting it... Such houses were described in the Bible as leprous, [and] before that in Homer... as a House of Hades."

The tale's basis is the 1959 book *The Haunting of Hill House* by Shirley Jackson, a New England wife and mother who had a knack for making the most eccentric characters seem as real as one's neighbors. Her most famous story, *The Lottery,* deals with an inbred farming community whose inhabitants annually select one of their own to be stoned to death in order to assure a good harvest season. A *Time* magazine review of *Hill House* left Wise so intrigued that he checked to see if the novel had been optioned. It had not, so he bought the rights and brought the book to his office at the Samuel Goldwyn Studio. As he was sitting on his couch reading a particularly scary passage, screenwriter Nelson Gidding rushed into the office with a question. "I jumped about three feet off that couch!" Wise told Frank Thompson in a 1995 interview. "I said, 'Oh boy, if this thing can do on the screen what it just did to me on the page, we'll have a fine, classy horror picture here.'"

The Mirish Company, for which Wise had recently made *West Side Story* and was completing *Two for the Seesaw,* bought the motion

Opposite: Huddled in the spooky nursery, Luke (Russ Tamblyn), Dr. Markway (Richard Johnson) and Theo (Claire Bloom) realize that Eleanor (Julie Harris) must leave Hill House at once. This page: Eleanor is defiant atop the deadly spiral staircase in the library.

Elegant Chills

picture rights from the director, ostensibly for release under the United Artists banner. Gidding took on the screenplay. On April 11, 1961, Wise and Gidding made a weekend visit to Shirley Jackson in Bennington, Vermont, to discuss ideas for a screen version of her book.

Many film industry producers tend to take a condescending view of horror pictures, which some designate as "freak attractions." Wise, however, was very enthusiastic about the project. As he said in 1990, "This kind of film is generally a lot of fun for directors; you can do so much with sets, photography, lighting, lenses, music and sound effects."

The quartet of ghost chasers are confronted by a statue of Hugh Crain in the Greenhouse — one of the few Hill House sets that featured any hint of daylight.

Walter Mirish soon began to have second thoughts about the project, however, and decided to put it in turnaround. Wise's agent, Phil Gersh, offered it to MGM as the picture Wise still owed them after severing his contract with the studio in 1957. MGM agreed, but only if the project could be done on a firm budget of $1 million. After the production department made a budget breakdown from the script and came up with a minimum figure of $1,400,000, the studio nixed the deal. Someone suggested that it might be less expensive to make the picture at MGM's British Studio, an opulent facility with seven soundstages located near London at Elstree, Boreham Wood, Hertfordshire.

Having finished principal photography on *Two for the Seesaw,* Wise was scheduled to go to London for a command performance of *West Side Story.* While there, he left *The Haunting* script with the management at MGM British. By May 12, he was back doing postproduction work on *Seesaw.* After several weeks, Wise received the new breakdown from England, which allowed a less restrictive schedule and a budget of $1,050,000. MGM greenlit the project.

Color had become obligatory for major productions, but Wise insisted on filming *The Haunting* in Panavision black-and-white, and had this condition written into his contract. As he later noted, "I felt that the subject lent itself to the wide format [2.35:1 ratio,] and that it *had* to be in black-and-white." (Years later, that contract clause made it possible for Wise to head off a move by Turner Entertainment to colorize the video release. The picture is currently available in black-and-white in both letterbox and pan-and-scan editions. The former is highly recommended.)

Although the picture would be filmed entirely in Britain, Wise was adamant about keeping the novel's New England setting. He felt that a haunted house in America would be "a bit fresher" because "there's one around every corner in England."

Ettington Hall, a centuries-old country manor house about 10 miles south of Stratford-on-Avon, became the exterior of Hill House. The huge mansion was decorated with turrets and spires, surrounded by dense woods, and had an evil look in certain lighting conditions. The house's rooms were surprisingly cheerful, so the film's baleful interiors had to be created elsewhere. Six sound technicians took over the house for a week, working around the clock in shifts to record all of the ancient structure's creaks and groans.

All of the film's interiors were designed by British artist Elliot Scott and built on Boreham Wood stages. There's a heavy atmosphere in these sets, thanks to the house's oppressive lineaments, as well as the bulky, dark furniture, the massive doors and the overwhelming denseness of props and details. Scott had previously designed several artistic productions, including *I Accuse* (1958) and *The Four Horsemen of the Apocalypse* (1962), and he and Wise saw eye-to-eye on matters concerning the picture's visual style.

Scott was the one who recommended that the picture be shot by Davis Boulton, a virtually unknown cinematographer. A young former

still photographer, Boulton had only recently graduated to the position of lighting cameraman, but Scott had been impressed with the work he'd done on his first two productions, *Children of the Damned* and *The Password is Courage*. Wise took Scott's advice and hired Boulton, whose lighting became one of *The Haunting*'s strongest visual assets.

The actors thrust into this eerie ambience were chosen more for experience and suitability than for box-office appeal. As Dr. Markway, the leader of the ghost-hunters, British star Richard Johnson does a capital job of setting aside his more familiar screen persona as a romantic lead. A professor of anthropology, Markway has leased Hill House as an ideal site to research psychic phenomena. Johnson effectively projects the personality of a dedicated scientist, affecting the bent shoulders and intense concentration of the bemused scholar. Dressed mainly in corduroys and V-necked sweaters, the actor makes Dr. Markway both likable and convincing.

Other fine thespians were cast as the members of Markway's research team. The brilliant stage and screen actress Claire Bloom — who had performed Shakespeare and modern romance with equal success — is forceful in her portrayal of Theodora, a glamorous New York lesbian who possesses strong extrasensory perception. Shots of her somber, dark eyes are among the film's dominant images. She is dressed throughout in *avant garde* clothes fashioned by London's so-called "beatnik designer," Mary Quant, and makes her entrance in a giraffe-skin coat with an uncombed Mongolian lambskin collar.

Julie Harris, who also boasted a strong theater background, took on the role of Eleanor, a fragile young woman who was tormented by a poltergeist during her childhood. Eleanor's adult life has centered on the demands of an invalid mother and a vicious sister. In an attempt to find a meaningful life in a place where she feels she belongs, Eleanor joins Markway's group and soon becomes the center of the ghostly power's attentions. Harris imbues the role with a sense of reality that is immediately felt by anyone who has ever known someone like Eleanor.

Russ Tamblyn, one of the stars from Wise's great 1961 musical *West Side Story,* is convincingly down-to-earth as Luke, the cynical playboy who will inherit Hill House when his elderly aunt dies. Initially perceived as a greedy, self-indulgent wise-guy, he gradually becomes more human as the story progresses. After Eleanor's death, he says of the mansion he is destined to own, "It ought to be burned down and the ground sowed with salt."

Before the film's main title, we see some nighttime views of Hill House, a complex, rambling structure reminiscent of Xanadu at the opening of *Citizen Kane.* The voice of Dr. Markway intones, "An evil old house, the kind some people call haunted, is like an undiscovered country waiting to be explored. Hill House had stood for 90 years and might stand for 90 more. Silence lay steadily against the wood and stone of Hill House, and whatever walked there walked alone."

Narrated flashbacks reveal the four deaths that have already occurred at Hill House, which was built by a wealthy religious zealot named Hugh Crain. His wife died upon her arrival to her new home, when her carriage mysteriously crashed into a tree; his second bride, backing away from something frightening, died after tumbling down the mansion's steep central staircase. After Crain himself drowned during a journey, his little daughter, Abigail, lived in her spooky Hill House nursery for the rest of her life. She died sick and alone while her paid companion engaged in a love tryst. Finally, the companion, who inherited the house, hanged herself from a spiral staircase in the library. "Scandal, insanity, murder and suicide," Markway exults. "The history of Hill House was ideal. It had everything I wanted... It was an evil house from the beginning, a house that was born bad."

The picture originally opened with a scene featuring Theo yelling angrily from the window of her Greenwich Village apartment as her female companion speeds away. Theo then uses a lipstick to write a message on a mirror: "I hate you." Wise says that "when we viewed the first cut, we realized that this scene labeled [the film's lesbian angle] too heavily, so we dropped it." The theme is suggested more subtly via Theo's hovering possessiveness and thinly veiled hints, and becomes explicit late in the story when Eleanor turns on Theo angrily, saying, "The world is full of inconsistencies, unnatural things. Nature's mistakes, they call them. *You,* for instance." Notably, Theo is not depicted as villainous. Although sometimes confrontational, she proves to be a strong and courageous ally.

After Markway and his team take up residence in Hill House, we soon learn more about Theo and Eleanor's emotional baggage. Theo wants a new lover, while Eleanor, who has spent her adult life tending to her invalid mother, has fled an overbearing family situation. On their first night in the house, the women are terrorized by loud noises emanating from outside their heavy bedroom door — including the sound of something rooting around in hoglike fashion, and finally a pounding that threatens to smash in the door itself.

Eleanor quickly develops a schoolgirl crush on Markway, and convinces herself that Hill House wants her and that she should remain there forever. Worried for her sanity, the others realize that she must leave. Markway's wife, Grace

Elegant Chills

Eleanor becomes dizzy at the foot of the central staircase — exactly where the second wife of Hugh Crain fell to her death. The others quickly realize that Eleanor is overwhelmed by Hill House's powers.

(played by Lois Maxwell, who would later become the ever-pining Miss Moneypenny in the James Bond film series), who has no patience with his research, arrives and tries to convince him to abandon the project. To prove her point, Grace elects to spend the night alone in the nursery, the supposed haunted heart of Hill House. During the night she is heard screaming, but cannot be found. Eleanor goes into the library and climbs the unsafe spiral staircase from which the nurse hanged herself. Markway rescues her and demands that she leave. Eleanor tells herself, "I'm coming apart a little at a time... Now I know where I'm going. I'm disappearing inch by inch into this house." As she drives away, the disheveled and terrified Grace appears on the road ahead. An invisible force grapples for the steering wheel, and Eleanor is killed when her car crashes into the exact spot where Hugh Crain's first wife was killed.

A brief epilogue displays the brooding exterior of Hill House as Eleanor's voice concludes, "Hill House has stood for 90 years, and it might stand for 90 more. Within, walls continue upright, bricks meet, floors are firm, and doors are sensibly shut. Silence lies steadily against the walls of stone somehow, and we who walk here walk alone."

Wise found the British camera crew system much to his liking. Davis Boulton, the picture's nominal director of photography, served as what the English term a "lighting cameraman." Wise recalls, "He worked exclusively with the lighting and did a marvelous job of it. All handling of the camera was left to the operator, Alan McCabe, who worked with me on the setups. I was very pleased with their work."

Much of the lighting bears a strong resemblance to the style that Nicholas Musuraca, ASC contributed so unforgettably to Wise's first credited directorial effort, *The Curse of the Cat People* (1944), and the superb work of Robert DeGrasse, ASC in the director's subsequent film, *The Body Snatcher* (1945). These pictures were produced under the supervision of Val Lewton, an RKO Radio unit producer who made excellent, artistic horror films under budgets of $150,000. As it was Lewton who had Wise promoted from film editor to director, Wise always speaks of him as his mentor. "I loved doing those films, and I learned a lot from him," Wise says. "One reason I wanted to do *The Haunting* was a need to return to that kind of thriller."

In a 1944 press release, Lewton said that his pictures were "based on three fundamental theories. First is that audiences will people any patch of prepared darkness with more horror, suspense and frightfulness than the most imaginative writer could ever dream up. Second... is the fact that extraordinary things can happen to very ordinary people. And third is to use beauty of setting and camerawork to ward off audience laughter at situations which, when less beautifully photographed, might seem ludicrous."

The Haunting fully exploits these theories except that the people are not at all "ordinary." (The characters in Lewton's later pictures had also become increasingly colorful). Hill House has dark patches sufficient to conceal any number of spirits or monsters. It is quickly noted that "there isn't a right angle in the house," and the doors open and close by themselves. Boulton and McCabe maintained their use of shadowplay throughout the story, and also contributed some weird camera tilts (very unusual at that time in wide-format photography) and even lens distortion without compromising Claire Bloom's glamour or Julie Harris's childlike aura.

"The widest angle Panavision anamorphic lens available at that time was 35mm or 40mm," Wise recalls. "I wanted the hallways to look long and dark, so I asked [Panavision president] Bob Gottschalk if he didn't have a wider lens. He said they had a 28mm, but that it had a lot of distortion. I told him that was exactly what I wanted for certain places. He didn't want me to use it, but I kept insisting until he gave in — on the condition that I would sign a paper saying that I knew the lens was in an experimental state and I wouldn't complain about the distortion. We used it most effectively for certain shots."

The house's already eerie appearance was enhanced by filming some of the night exteriors with Eastman's black-and-white infrared film. Infrared emulsion is not sensitive to visible colors of the spectrum, but instead registers longer waves that lie invisibly beyond these colors.

Solid objects reflect and absorb infrared light differently from ordinary light. Green grass and foliage are reproduced as almost white, skies come across very dark grey to black, and other everyday objects usually yield unexpected results. When used with a small aperture and a deep orange or red filter such as Wratten 25, 88A or 89B, infrared produces a strong night effect in daylight, with strange tone variations appropriate to an "evil" house. Although the emulsion had been vastly improved in the years leading up to *The Haunting* (with an arbitrary 50 ASA rating), high filter factors considerably slowed down the stock.

One of the film's most disturbing and ingenious scenes shows six-year-old Abigail (Janet Mansell), in close-up, progressing by degrees into an 80-year-invalid (Amy Dalby). The effective shot has the appearance of a modern "morphing" effect, but it was accomplished very smoothly via gradual dissolves.

A scary aspect of Hill House — and, indeed, of most reputedly haunted houses — is the presence of "cold spots," small areas in a perpetual icy cold state. Wise realized that merely having the actors shiver and complain would not convey the fear engendered by a sudden, inexplicable chill. Boulton and makeup artist Tom Smith came up with an ingenious solution for the problem. A special makeup was applied to the players' faces and hands, and as they stepped into the "cold spot," colored filters were placed over the lights, effectively draining the life from the actors' flesh to create a clammy pallor.

In another terrifying nighttime sequence, Eleanor awakens to the indistinct cries of a brutal man and a terrorized little girl coming from beyond a wall covered with bas-relief carvings. The camera holds on the wall as the moonlight slowly shifts, revealing a scowling face hidden within the decor. In the semi-darkness, Eleanor grasps a cold hand

she assumes to be that of Theo. The ghostly voices become more terrifying and the grip excruciatingly painful, forcing Eleanor to cry out in fear and pain. When the lights suddenly come on, Eleanor realizes that Theo had been asleep on the other side of the room — and that the phantom hand could not have been hers.

Another scene offers a dizzying bit of visual magic as the camera moves smoothly and swiftly from the bottom to the top of the high and rickety spiral staircase in the library. The balustrade was designed to function as a track substantial enough to accommodate a small dolly and a 35mm camera. A control wire ran the full length of the railing. The camera was taken to the top of the staircase and allowed to slide backwards down to the bottom. The footage was later reversed.

In the film's most frightening sequence, a monstrous, unseen presence attempts to smash through the bedroom door to reach Eleanor and Theo. To the accompaniment of loud, uncouth noises, the door buckles and bulges almost to the point of bursting. The actual door comprised several layers of laminated wood. "All that was on the other side was a very strong prop man," Wise explains, "and it scared the hell out of everybody."

Wise has commented that there are several "busses" in the picture, meaning sudden startling intrusions of sights and sounds timed to jar the spectator. The term originated during Val Lewton's first production, *The Cat People* (1942), in which a young woman on a Central Park concourse is being stalked through the dark by a panther woman. When she stops under a tree, she realizes that something is up there, ready to spring. Suddenly, a loud hissing sound is heard as a shape lunges into the scene: it is a bus applying its air brakes. The scene proved so adept at shattering audience complacency that Lewton and his associates — including film editor Robert Wise — continued to use what they called "busses" to enhance moments of tension in their later suspense films (e.g., a cat turning over a trash can as a woman is being stalked in a dark alley; a horse snorting noisily as a man stealthily enters a dark stable; a train rumbling over a trestle just as a frightened girl passes underneath).

A dramatic orchestral score by Humphrey Searle adds to *The Haunting*'s sense of unease. The music is in the modern mode, sometimes dissonant and occasionally strident, with an angularity appropriate to the macabre mood and drab decor. It is surprisingly listenable and has the grace to go silent whenever the house's weird sounds hold forth.

At first look, many spectators hardly knew what to make of *The Haunting* — they either loved it or hated it. The picture wears well and has long since acquired classic status as an intelligent, elegant and influential example of motion picture art. It has remained one of Robert Wise's favorites. "I loved the look of it," he says. "The style took me back to my

Pursued by unseen ghosts, Eleanor makes a frantic run through Hill House's unending corridors. The use of sound in these sequences conjures unparalleled eerieness.

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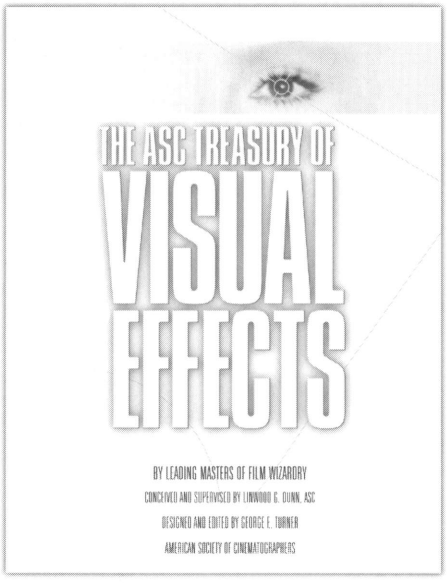

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roots with Val. Regrettably, it was my last black-and-white film." ■

Credits

Metro-Goldwyn-Mayer *presents an* Argyle Enterprises *picture; produced and directed by* Robert Wise; *associate producer,* Dennis Johnson; *screenplay by* Nelson Gidding; *based on the novel* The Haunting of Hill House *by* Shirley Jackson; *photographed in* Panavision; *director of photography,* Davis Boulton; *music composed and conducted by* Humphrey Searle; *production designer,* Elliott Scott; *film editor,* Ernest Walter; *camera operator,* Allan McCabe; *special effects,* Tom Howard, FRPS; *sketch artist,* Ivor Beddoes; *set decorator,* John Jarvis; *wardrobe supervisor,* Maude Churchill; *Claire Bloom's clothes by* Mary Quant; *makeup artist,* Tom Smith; *hairdresser,* Joan Johnstone; *assistant director,* David Tomblin; *casting director,* Irene Howard; *continuity,* Hazel Swift; *sound recordist,* Gerry Turner; *dubbing mixer,* J. B. Smith; *recording supervisor,* A. W. Watkins; *dubbing editor,* Allan Sones; *produced at* Metro-Goldwyn-Mayer British Studios, Boreham Wood, Herts. Western Electric *sound. Running time* 112 minutes.

Eleanor Lance, Julie Harris; *Theo,* Claire Bloom; *Dr. John Markway,* Richard Johnson; *Luke Sannerson,* Russ Tamblyn; *Grace Markway,* Lois Maxwell; *Mrs. Dudley,* Rosalie Crutchley; *Mrs. Sannerson,* Fay Compton; *Mr. Dudley,* Valentine Dyall; *Carrie Fredericks*, Diane Clare; *Eldridge Harper,* Ronald Adam; *Second Mrs. Crain,* Freda Knorr; *Abigail, age six,* Janet Mansell; *First Mrs. Crain,* Pamela Buckley; *Hugh Crain,* Howard Lang; *Landlady,* Mavis Villiers; *Dora,* Verina Greenlaw; *Bud,* Paul Maxwell; *Nurse,* Susan Richards; *Abigail, age 80,* Amy Dalby; *Fat Man,* Claud Jones; *Abigail's Companion,* Rosemary Dorkin.

The writer is much obliged to Robert Wise and the late DeWitt Bodeen.

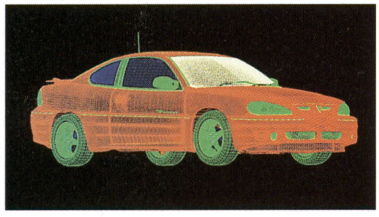
Short Takes

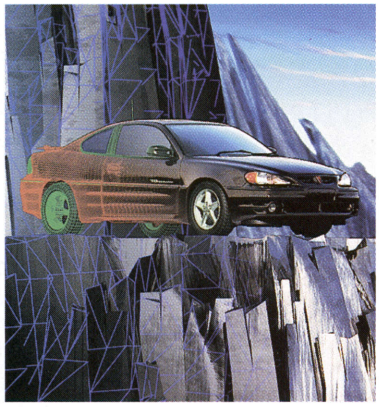
Digital Driving and Amoral Antics

Heavy Metal Roadster
by Stephanie Argy

In two new Pontiac Grand Am commercials, the car races through surreal all-metal environments: in the first spot, it's a shiny, modern city, and in the second, a desert scene made up entirely of metallic objects. Though the images look as though they were shot on film, all of the objects onscreen — the car and its surroundings — were actually created entirely in a computer by artists at the Digital Domain visual effects facility.

Ray Giarratana, the Digital Domain visual effects supervisor who directed the two spots, says advertising agency D'Arcy Masius Benton & Bowles (DMB&B) wanted to portray the car as a tough vehicle that's able to handle all sorts of environments. While the ad executives came up with the concept of an all-metal world, they were not sure how to bring it to life. "I think by the time they were talking with us, they were in limbo about how to do it," says Giarratana. "How on earth are you going to show an environment that doesn't even exist?"





Images courtesy of Digital Domain.

Digital Domain's CG Pontiac Grand Am takes on a mountain of virtual metal.

Giarratana toyed with the idea of shooting a real car and compositing it into a miniature or computer-generated landscape, but he foresaw too many technical problems, such as tracking and getting reflections to work right. "It was getting obvious that it was going to be a lot of work, and that it would be very a painful process," he says.

Over the last few years, though, Digital Domain has done a number of commercials in which digital cars have been created and inserted into real photography, and Giarratana thought that the best solution for the Pontiac spot would be to combine a digital car with a digital environment. "That was the right answer," he says. "It just solved so many other problems."

Primarily using Lightwave software on DEC Alpha computers running Windows NT, a team of 15 to 20 digital artists spent nearly four months creating the car and its synthetic environment. "I think, by far, the biggest challenge was just getting enough richness of detail," says Giarratana. "We designed dozens of buildings and lots of road textures, and they all had to be done in metal. We didn't want it to end up looking like a big metal junkyard."

Even though everything in the spot was computer-generated and never existed in the real world (save for one brief interior shot of a woman's hands on the steering wheel), Giarratana brought in a cinematographer to consult on the project: Bill Bennett, a car-commercial expert who had been involved with some of Digital Domain's other CG car spots.

Bennett says he had several meetings before Digital Domain even started on the spot. "They began to realize that there's more to lighting cars than meets the eye," says Bennett. "A cinematographer's eye is useful, whether you're lighting in the real world or in the virtual world."

Later, when the commercial was about halfway done, Bennett returned. "I went down for a day and worked with their digital artists, looking at a lot of their rough material and, basically, advising them on how to make things look real and how to improve the lighting on the car."

To make the commercial look more real, Bennett helped the artists incorporate flaws into their shots. "The virtual world wants to be perfect, and when you see something like that, it looks like a bit a cartoon," he says. He notes that in the real world, even though people are careful, cameras shake, dolly moves aren't completely smooth, and zooms aren't always even. Audiences have become so accustomed to those minute irregularities that shots will look fake if they aren't there. "I advised them on the nature of the errors that you end up with," says Bennett. "A lot of that had to do with camera movement." He says that the artists made large sweeping shots less perfect by adding little accelerations, decelerations and back-panning errors.

Giarratana says that movement adjustments made an enormous difference, because even the most perfectly drawn CG object won't appear real if its motion in the shot seems incorrect. When people talk about "photo-real," they don't just mean the way something looks in a single still frame. "'Photo-real' really means the way it moves, the way you look at it and the way it's photographed from a camera," Giarratana explains.

At one point, he remembers, the agency executives looked at a shot of the car moving onscreen and said, "This is one of those shots where we would sandbag the back end a little bit." Giarratana says the artists did the equivalent — digitally adding a bit of weight in the back end of the car. "It was great for the agency to say something practical like that," says Giarratana.

However, he also had to restrain the agency from going too far with the computer-generated world. "Originally, the agency said, 'It's like animation; we can move the camera anywhere,'" recalls Giarratana, who argued for keeping the camerawork consistent with what could be done in reality. "Cinematographers have photographed cars for years, and there are certain angles that we've come to know and love," he says. He remembers telling the executives that familiar angles would give viewers a place to feel a bit more comfortable within the spots, which would be visually arresting even without impossible camera moves. "'Let's keep it within the bounds of realism,'" he recalls saying. "Just because you can move the camera anywhere doesn't mean you should."

As far as making the car more beautiful, Bennett says that he talked the artists through some lighting techniques. "When you're a director of photography designing lighting in the virtual world, one of the big advantages is that you can get away with the types of cheats that you'd love to do in the real world."

Shooting cars in cities, for example, is always a challenge. "The thing that makes cars look beautiful is reflection from the sky," Bennett says. If a car is driving through a canyon created by enormous buildings, though, there's only a narrow sliver of sky. In the real world, he says, one solution is to shoot with a park on one side, so that the sky can still be reflected off the top of the car.

For the Pontiac "City" spot, he was able to suggest a different approach. Initially, the digital artists were very reality-bound, and the reflections they created on the car were exactly as many stories as the buildings themselves. Bennett convinced them that the reflections didn't actually have to match those of the buildings. "Reflections in objects — particularly complex shapes like cars — are easy to cheat," he says. "As long as there is some reflection there, you can't discern whether it's right or not. If there weren't any buildings reflected, it would look wrong." In the end, he says, the artists scaled down the reflections considerably. "There were 40-story buildings in the spot, but the reflections in the car are three-story buildings."

The artists were also able to improve the look of the car by combining different times of day in single shots. "Cars look best in late light, and cities look best in high light," says Bennett. "At times, the city was lit with direct sunlight, yet there is almost a sunset reflected in the side of the car."

Bennett says that his more than 20 years of shooting experience have taught him when he can make these kinds of cheats and when he can't. "There's nothing that can replace standing on a location and knowing what to move to affect the change," he maintains. "I was able to bring that experience of working in the real world into the virtual world. I can look at a scene, even if it's in a computer, and sense where the lighting sources are and how they should be moved."

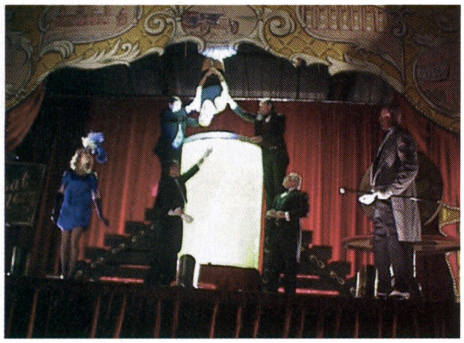
Giarratana offers that having Bennett come in to teach the digital artists about lighting cars was like having Mickey Mantle come in to give pointers on batting. "They were blown away," he says. "While his techniques were very practical, live-action kinds of things, the equivalents in the digital world were very obvious to our artists, and we jumped all over it."

For cinematographers who want to learn more about what digital artists can do, Bennett recommends playing with Adobe Photoshop, a software used to manipulate photographs digitally. "Change the sky, insert a car, see what you can do and what kinds of problems you have trying to make it look real," he advises.

Meanwhile, Giarratana suggests that digital artists learn about film. "Go buy a camera and take a picture of your girlfriend, and if it doesn't look like Herb Ritts shot it, figure out why."

Though Bennett and the digital artists come from different disciplines and approach images with different tools and terms, the cinematographer says that he was ultimately able to communicate with them in the same way he does with his on-set crew. "I tend to speak more in terms of the result, because I've found that it's more effective," he says. "You tell them what you want; you don't tell them how to do it."

"Filmmaking is filmmaking," says Giarratana. "Once you stop worrying about the technology and start worrying about the end result, we're all talking the same language."



Role Models Running Amok

by Stephanie Argy

After shooting "My Name Is…," the breakout video that introduced the world to rapper Eminem, cinematographer Peter Seleznick returned to craft the visuals for "Role Model," another song from the versatile lyricist.

In the "My Name Is…" video, Eminem embodies various real-life figures, including President Bill Clinton, shock-rocker Marilyn Manson and former talk-show maven Johnny Carson. "Role Model" continues the multiple-personas theme with the rapper impersonating a whole new cast of characters: a priest, a policeman, escape artist Harry Houdini and himself. The video also features performance footage in a nightclub.

Born in South Africa and raised in the United Kingdom, Seleznick began his career in England as an assistant on documentaries. He first worked with director of photography Denis Crossan. After moving to the United States, he assisted such cinematographers as Harris Savides and Joe Yacoe.

After three years of assisting in America, however, a debilitating health condition temporarily took Seleznick out of the game. "I destroyed my back, and because of it I was forced out of assisting," he relates. After undergoing surgery and taking time out to recuperate some six years ago, he began shooting ads and music videos on his own..

In the "Role Model" video, Eminem's various caricatures engage in activities inappropriate for so-called role models: the cop indulges in the illicit take from a drug bust; in a seedy hotel room, a priest entertains a little boy, a little girl and then a prostitute; Houdini plunges headfirst into a tank of water; and Eminem alter ego "Slim Shady" bludgeons his mother to death with a shovel. "There was no glamour to it, so we kept it edgy to match the dark content," says gaffer David Besdesky, who, during one reflective moment, asked himself, "If you work on this, can you still go to heaven?"

For the Houdini segment, Seleznick and the video's directing duo — Phil Atwell and Dr. Dre — wanted an old-time film aesthetic that didn't exactly replicate period footage. "It was certainly not historically accurate," says Seleznick, who points out that the footage was shot on Kodak's Vision 320T

Photos by David Besdesky.

From top: Eminem is lowered into the Houdini tank; cameraman Peter Seleznick operates while second assistant Nate Berggren uses a drill to "hand-crank" their Arri-IIC; the two wonder if they will ever get into heaven.

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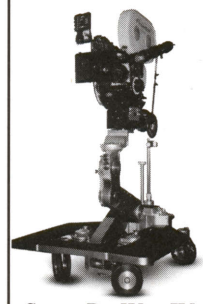

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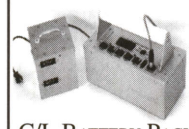

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A Kino Flo blanket light was hung from a Condor while shooting the police car sequence.

color stock. (The video's other segments were photographed on Vision 500T.)

All the same, Seleznick opted for a hand-cranked camera that would produce the stuttery motion of a 1920s movie. At the suggestion of Alex Wengert, general manager at the Otto Nemenz camera-rental house, he decided to shoot with a modified Arriflex IIC fitted with a crank instead of a motor.

The handle on the camera extends so far out that Seleznick, who was operating, couldn't crank it himself. That duty fell to second assistant Nate Berggren, who came up with the idea of using a hand drill to drive the camera when the cranking began to shake the camera too much. Though the drill technique worked well on the set, Seleznick believes in retrospect that it might have been *too* effective: pulsing was added during telecine to lend the footage a more organic feel.

Seleznick covered the Houdini section, unlike the rest of the video, primarily with fixed shots. "We did some crane moves, but mostly it was more static," he says. He also undercranked the cameras: the Arri IIC played out at about 16 to 17 fps, while the principal camera — an Arriflex 435 — was used to shoot additional footage between 16 and 20 fps as a crew member manually varied its speed via remote control. (By comparison, silent-era films ran at approximately 18 fps.)

Seleznick used two different generations of Cooke lenses on "Role Model." For the Houdini section, he deployed a set of old, uncoated Cooke primes; for the remainder, he chose the new Cooke S4 series. Most of the time, he stayed with wide lenses, particularly the 14mm and, to a lesser extent, the 10mm. "I find myself not using long lenses much," Seleznick says. "When you compose images that way, they become flatter and less interesting."

Though he did resort to a 5:1 zoom, particularly on Technocrane shots, Seleznick tends to avoid zooms whenever possible. "If it's just a variable prime, I'm not a big fan," he says. "You can control depth of field better with primes." When working in 16mm — as he does on about half his jobs — he prefers the images produced by primes. Also, he adds, a zoom lens can be an irresistible temptation to some directors, who will demand unplanned push-ins and push-outs. "Once you mount a zoom, it's sometimes hard not to use it," he observes.

When working with 35mm, Seleznick tends to shoot at about f2.5 to f2.8. "I don't like to be wide-open," he

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says. "Sometimes it gets in the way when the performer is moving in and out." At the same time, stopping down too much can also cause problems. "Looking through the viewing system is difficult when you're stopped down. I find the texture of the ground glass distracting, because it's got all that grain."

When doing close-up work for "Role Model" with longer lenses, Seleznick applied Mitchell diffusion. He's also a fan of Tiffen's Soft/FX, which he uses for beauty work, especially on women. "It's not like a hazy kind of softening," he explains. "The Soft/FX takes out a bit of detail without making the lines soft."

On "My Name Is...," the crew worked on a soundstage packed with sets for the video's various sequences. Prelighting became impossible because fixtures for one set almost always had to be placed in the others surrounding it. But on "Role Model," adequate space was not as much of a problem. "This time around, they definitely had more money to spend," says Seleznick. "There were fewer sets, but bigger ones."

To accommodate the more expansive studio space, the second video was shot in an enormous hangar. Of course, this setup presented its own set of difficulties for the lighting crew. "Whenever you're in a space that large, you have to think of the overhead lighting," says gaffer Besdesky. In this case, the ceilings were about 65' high, meaning that lamps had to be either suspended from a truss system or raised on various types of lifts. Besdesky took the second approach, deploying three 80' Condors and one 40' scissor lift.

He also used Kino Flo's new blanket light, an apparatus that features 16 individual 6' tubes in a pre-built speed-rail frame that can be assembled in less than 10 minutes. "It's a very quick, beautiful, soft light," says Besdesky, who adds that the blanket light reminds him of a scaled-down Fisher Light. "This is a way to get a little baby version of it."

Speed is always a concern on music videos, and Besdesky relied on the blanket light to quicken his pace. At one point, two scenes were going to be shot back-to-back: the first transpired in a kitchen set inside the stage, while the second featured a police car parked just outside. Besdesky hung the blanket light from a Condor and extended it over the kitchen to provide that space's key light. After completing that scene, he swung the arm around so that it protruded out the stage door and over the car. "We only had to move the base of the Condor about 15'," he says. Keeping both the Condor and the blanket light within the stage also allowed the crew to get around the fact that they didn't have permission to shoot outside the stage.

Less than six months passed between shooting on the "My Name Is..." and "Role Model" videos, and Seleznick got a firsthand look at Eminem's rapid rise to fame. "The first time, he was a complete unknown," remembers Seleznick. "The second time, he'd sold a million records." ■

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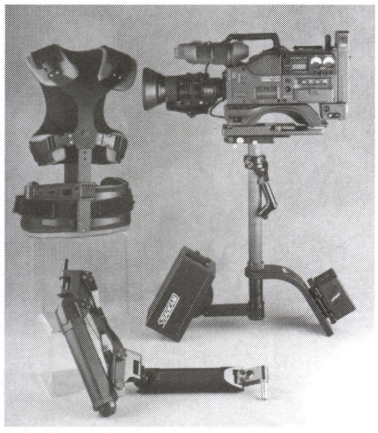
New Products & Services

compiled by Andrew O. Thompson and Chris Cooling



SK2 Steadicam System

Cinema Products Corporation announces its latest SK2 Steadicam, which includes the "C" Stand as well as the "Lo-Mode" kit. The Turtle Base "C" Stand, required for Steadicam balance, is in two sections and fits neatly in the supplied SK2 soft carrying case. The Lo-Mode kit allows the camera to be inverted to easily capture shots near to the ground.

This unit is a basic camera support system that handles cameras weighing between 9 and 19 pounds. The Iso-Elastic arm has a single-articulated design and can be adjusted while supporting the camera. The Steadicam operator can therefore place the arm in any position, where it will remain — a feature that is especially useful for "locked-off" shots.

The P43 Green Screen monitor allows good contrast from dark-to-light situations as an assurance of perfect balance for the operator. Utilizing a low-mass gimbal, the operator can capture a Steadicam's fluid movements. A precision camera stage provides a solid base for the camera and facilitates smooth ease of adjustment from side-to-side and fore-and-aft. The carbon-fiber post and interface to the stage form a solid bond to assure the operator that there's no jitter in the picture.

The SK2 System includes a self-instructing videotape with manual. Cinema Products Corporation also offers regional three-day Steadicam workshops on a regular basis.

Cinema Products Corporation, (310) 836-7991, fax (310) 836-9512.

Portable Power System

Kino Flo now offers a new portable AC power system for remote set lighting work. The 1800W Portable Inverter System supplies a stable sine wave current to Kino Flo, HMI and tungsten sources when normal AC outlets are unavailable.

This system consists of the 1800W sine wave inverter, 40-amp charger and 194-amp-hour battery. Packaged in a sturdy, transportable casing with handle and removable wheels, the 1800W Inverter System turns 12v DC power into AC energy (100v AC-230v AC) for lighting in planes, trains, automobiles, boats and other "off the grid" locations. All AC loads (including Kino Flo, HMI or incandescent lights) operate smoothly because of the Inverter's "true" sine wave output. No interference occurs with audio, video or electronic equipment.

The 1800W Inverter offers many features, such as a high-surge capability of five seconds at 2900W — an asset for hard-to-start loads. An AC Feed-Thru option allows operators to feed AC to the Inverter to pre-light. When the camera is ready to roll, one can simply disconnect the AC and the Inverter automatically switches to battery power. No restrike is necessary for Kino Flos and HMI lamps.

The system's 194-amp-hour battery consists of sealed, non-spillable, lead acid gel that is approved for air transport. The battery can be charged to 75 percent in only two hours and 20 minutes. Three batteries can be cycled for an uninterrupted supply of power.

Kino Flo, (818) 767-6528, fax (818) 767-7517, website: www.kinoflo.com.

The Powerplate

Band Pro Film/Video introduces the Powerplate power supply. Designed with the same color and profile as the Sony Quick-Release Plate, this unit is fully compatible with most other cameras — including Ikegami, JVC, and Panasonic models — and is fully compatible with the Chrosziel Quick-Lock Tripod Plate.

The Powerplate mounts directly between the camera's base plate and the tripod. Once attached, the apparatus can remain connected to the camera and tripod, creating an easily transportable unit. In addition, the Powerplate provides the flexibility to either run off batteries or AC.

The Powerplate weighs 2.75 lbs. and adds 2" to the camera/tripod profile. Light and compact, the unit generates substantial current to power any professional or industrial camera. Because the Powerplate is a Universal Input Voltage supply operating on AC 85-264 volts or DC 110-370 volts, it can be plugged into outlets throughout the world. Plus, the unit offers built-in protection from overheating, short circuits or high current draws. The unit is certified by UL, CSA, CE and TUV.

Band Pro Film/Video, (818) 841-9655, fax (818) 841-7649, e-mail: info@bandpro.com.

Director's Viewfinder

Alan Gordon Enterprises, Inc. announces the new Pro Jr. Director's Viewfinder. Designed with the budget-conscious filmmaker in mind, this unit offers features a 12:1 zoom ratio with calibrations set for 16mm, Super 16,

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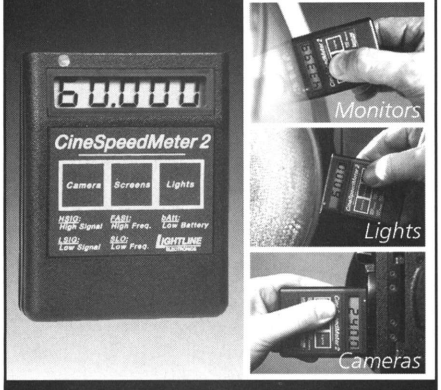

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35mm and ⅔" video formats. An insertable mask is included for 1.85:1 and 16:9 aspect ratios. Five-element optics guarantee a razor-sharp image through the viewfinder's full zoom range. This viewfinder comes complete with carrying case, strap and lens cover.

Alan Gordon Enterprises, (323) 466-3561, e-mail: info@alangordon.com.

Micro Lightbank

The Chimera Micro Lightbank's improved design incorporates a smaller front screen (5" x 7" or 12.6 x 17.8cm) and a smaller rear opening that eliminates most of the light spill found with the original Micro. Also, the poles are now sewn into the Lightbank's fabric to prevent such light loss. The Micro also features removable diffusion screens, and is supplied with the standard Chimera cloth and a lighter ¼ grid diffusion, for use with lower-wattage camera lights.

Chimera, (888) 444-1812, web site: www.chimeralighting.com.

Panavision's Digital Division

Panavision Inc. has hired industry veterans Alan Lasky and Frank Dutro to form a new digital services organization (Cinematography 2000) to bridge the gap between cinematography and computer-generated imagery. Panavision will use newly developed LIDAR (Light Detection and Ranging) technology to allow computer graphics artists to quickly complete work that will be combined with live-action motion picture images.

LIDAR, or laser-based radar, is an efficient technology for capturing real-world geometry for animation and effects. LIDAR technology allows the use of what is essentially a "3-D Camera" to shoot a 3-D plate of a live-action scene. The captured model is an accurate model of reality, with as much detail as necessary to capture a scene's subtle geometry. LIDAR can scan many more points than conventional surveying methods. Very large areas can be modeled quickly, even with the film crew present.

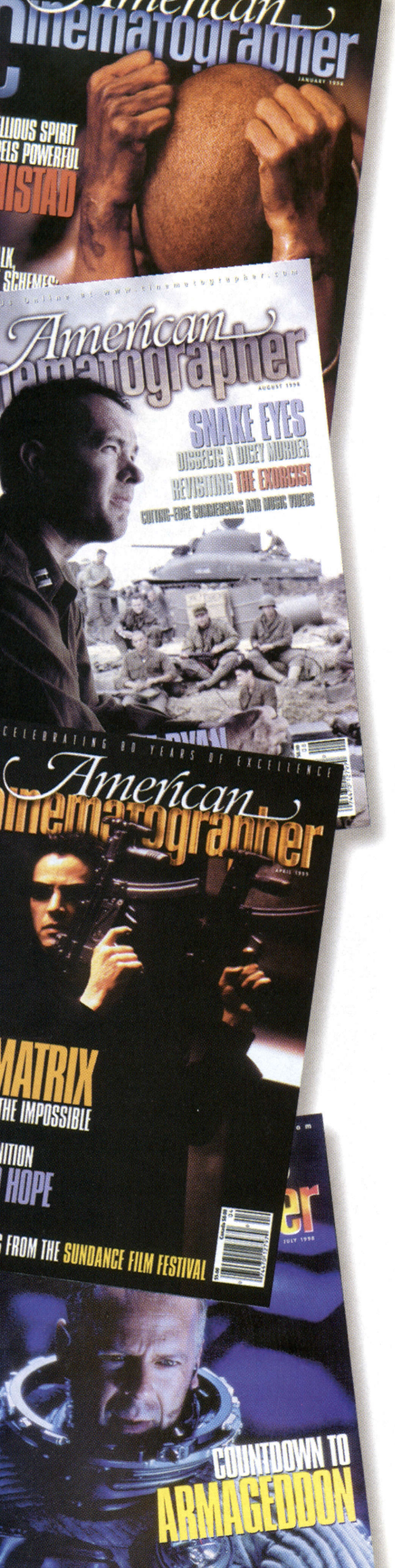
Panavision, (818) 316-1000, fax (818) 316-1111.

Cinesite Digital Imaging Division

Within its Hollywood office, Cinesite has opened Cinesite Digital Imaging, an outfit equipped and staffed to provide a full range of film-to-digital and digital-to-film conversion services. According to chairman/CEO Aiden Foley, Cinesite Digital Imaging and Cinesite Digital Studios will operate as distinct aspects of the business with separate staffs. "The ability to scan and record film without compromising the artistic integrity of the images recorded on the original negative is becoming increasingly important as more producers make broader use of computers during post-production," he says. "Ultimately, we believe that entire movies will be scanned for color grading and other post-production, with digital masters created for producing release prints."

Cinesite Digital Imaging will use Kodak scanners and recorders as the primary film input and output devices for conversion. The scanner employs a proprietary trilinear color array sensor and optimized diffusion illuminating to capture analog image information stored on the original film and convert it to digital picture files. The recorder uses a high-intensity red, green and blue laser light sources to accurately transfer information stored in the digital picture files onto Eastman EXR color intermediate 5244.

The division has also installed a



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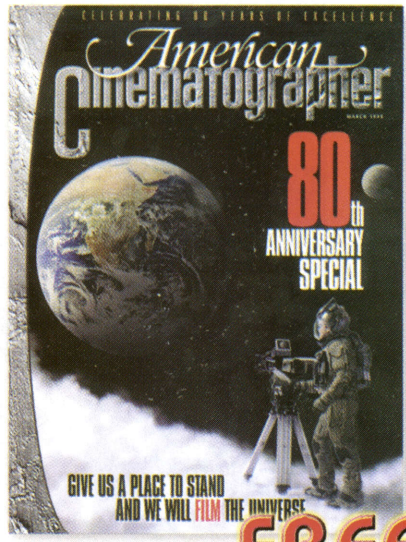

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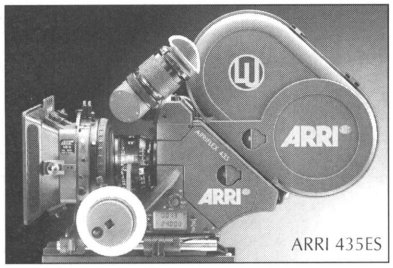

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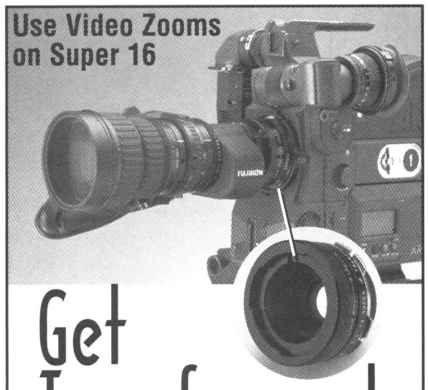


Get Transformed.

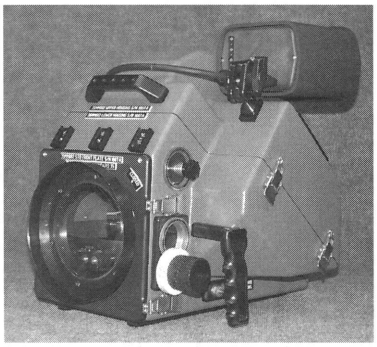
Century's 2/3" to Super 16 Transformer allows filmmakers to use broadcast-quality 2/3" video zooms on Super 16 cameras including Arri SR, SR2, SR3 and Aaton.

The compact and lightweight Transformer operates through optical compensation, eliminating the need to modify the lens. A cable (included) allows servo zooming with the original zoom lens' rocker control. The transformer unit is available in Arri PL, Arri Bayonet & Aaton mounts.

Jeff Giordano: 800-228-1254
Century precision optics
11049 Magnolia Bl., North Hollywood, CA 91601
Tel: 818-766-3715 • Fax: 818-505-9865
www.centuryoptics.com

Philips Spirit DataCine. Kodak and Philips Broadcast Television Systems Company received 1998 Emmy Awards for technical achievement for their respective roles in bringing this multi-standard telecine to the marketplace. Kodak designed and manufactured the imaging head that is the core component of the new telecine. The scanning system employs advanced illumination technology, including a high-powered, blue-rich Xenon light source coupled with CCD imaging sensors and optimized colorimetry. CDI operates in a Class 10,000 clean room environment, and is wired to transport and receive digital picture files over high-speed networks.

Cinesite, (213) 468-4400, fax (213) 468-4404.



Underwater Housing

Pace's Technologies' High-Definition Underwater System features an ergonomic design that allows the camera to be held in a comfortable operating position while maximizing freedom of movement and control. An external, high-definition, movable viewfinder accommodates different shooting styles. The viewfinder can also be used remotely. The Mark 4 housing is equipped for full remote camera controls. Like all Pace systems, the unit features a watertight diagonal seal and inner sliding tray. Topside, the housing's upper diagonal half lifts off neatly, providing total access to the camera while it's still in the housing. The Mark 4 supports the Sony HDW-700 mounted with a Fujinon 10 x 4.8 lens with doubler. The lens also requires the focus servo control for housing interface. Other available video production housings include the Mark 1, Mark 2 and Mark 3 for the 300-, 400- and 700-series Sony cameras.

Pace Technologies, (818) 759-7322, fax (818) 759-7323, web site: www.pacetech.com.

Portable Carry-On

PakTek's ProTechPak provides portable, organized protection for electronics and more. Its padded shoulder strap and attaché handles make for easy portability. The unit features two separate zippered compartments, two inside panels, 10 pockets to hold accessories and other tools, and a large document pocket inside. It's also built of tough Dupont Cordura.

Paktek, (800) 258-8458, fax (253) 589-1091.

Panasonic Products

Panasonic Broadcast and Television Systems Company announces availability of the AJ-D910WA ⅔" IT 3-CCD camcorder. Ideal for electronic field production (EFP) and electronic news-gathering (ENG), the camcorder features DVCPRO50/DVCPRO selectable record/playback in 16:9 and 4:3 wide aspect ratios, 33 minutes of recording time (66 minutes in DVCPRO), 10-bit digital signal processing, a high gain mode of more than 30dB, a signal-to-noise ratio of 63dB, minimum illumination of 0.2 lux and a high sensitivity. It consumes less

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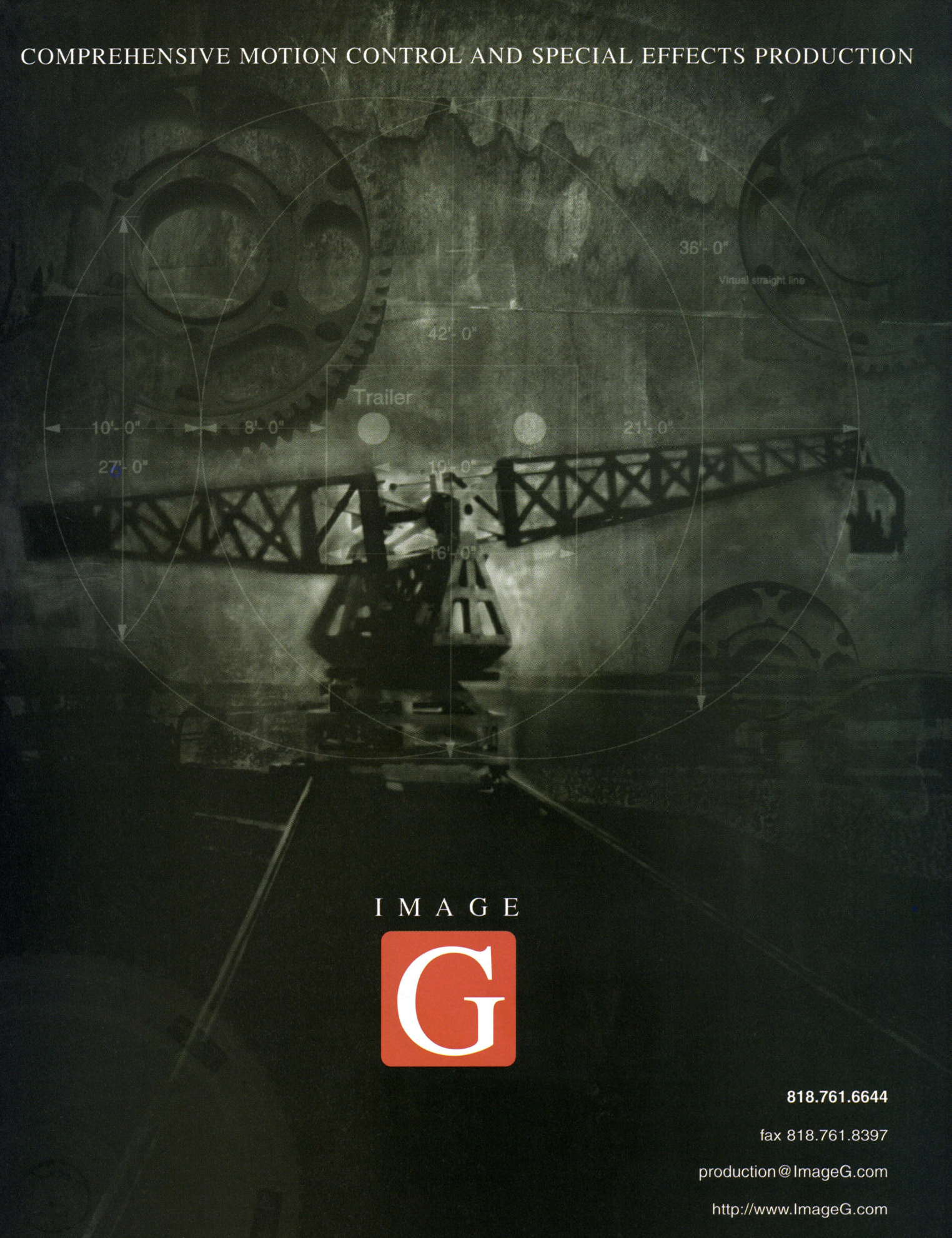

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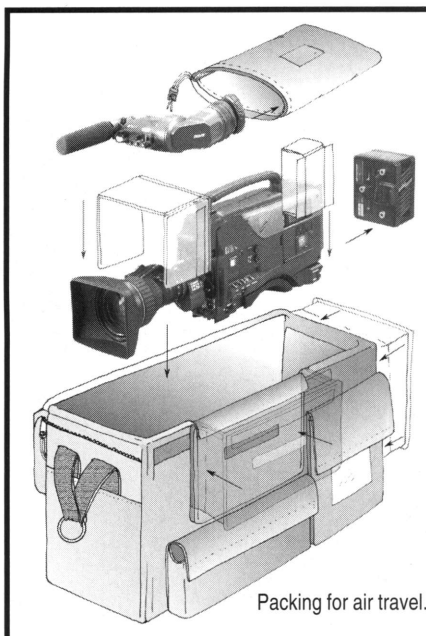

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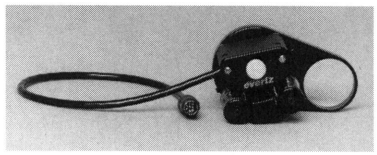
than 28 watts of power and weighs 15 pounds when fully operational. The camcorder's ⅔" CCDs are compatible with existing ⅔" lenses.

The unit also offers the option of Picture Link, Panasonic's field production system, which stores shot-logging data in the camera's memory and records it on tape during the eject cycle. Picture Link information can be read by Panasonic's newsBYTE 4X transfer DVCPRO nonlinear news editing system. Camera users will find a full range of controls, including PCMCIA camera setup storage card, 4:3 and 16:9 viewfinder options, a built-in color bar generator with tone, filter wheels and digital menu setups. A bayonet mount for ⅔" lens is standard, and a 26-pin VTR interface is optional.

Panasonic, (800) 528-8601.



Universal Film Reader/Decoder

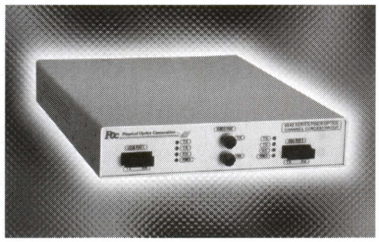
Evertz Microsystems introduces the 5550UV Universal film reader/decoder system, which provides an all-encompassing multi-format reader head and decoder unit. This apparatus can handle all major film formats and all of the various codes presently in use, all in one easy-to-install head and a separate 1RU decoder unit.

The Universal Reader Head can be mounted on a telecine or other film transport to recover Keycode, Arri code and Aaton code from 16mm, Super 16 or 35mm film. There is no need to swap different heads for different formats; this new head saves telecine time by eliminating the timely setup costs associated with swapping heads. The Evertz 5550 Decoder unit features automatic intensity control and also provides advanced digital processing for code recovery from film with noise and other unwanted artifacts. It is also an ideal reader for data mode transfers for the non-real-time users.

When coupled with Keylog Tracker-Evertz's Telecine Logging and Configuration Management tool and the

4025TR-Evertz's Film Footage Encoder, Evertz operates in the Windows 95 environment with a multitude of features. These include support for VistaVision, 65mm and 70mm, and for reverse reading and automated logging of print dailies.

Evertz, (905) 335-3700, fax (905) 335-3573, web site: www.evertz.com.



Fiber Optics System

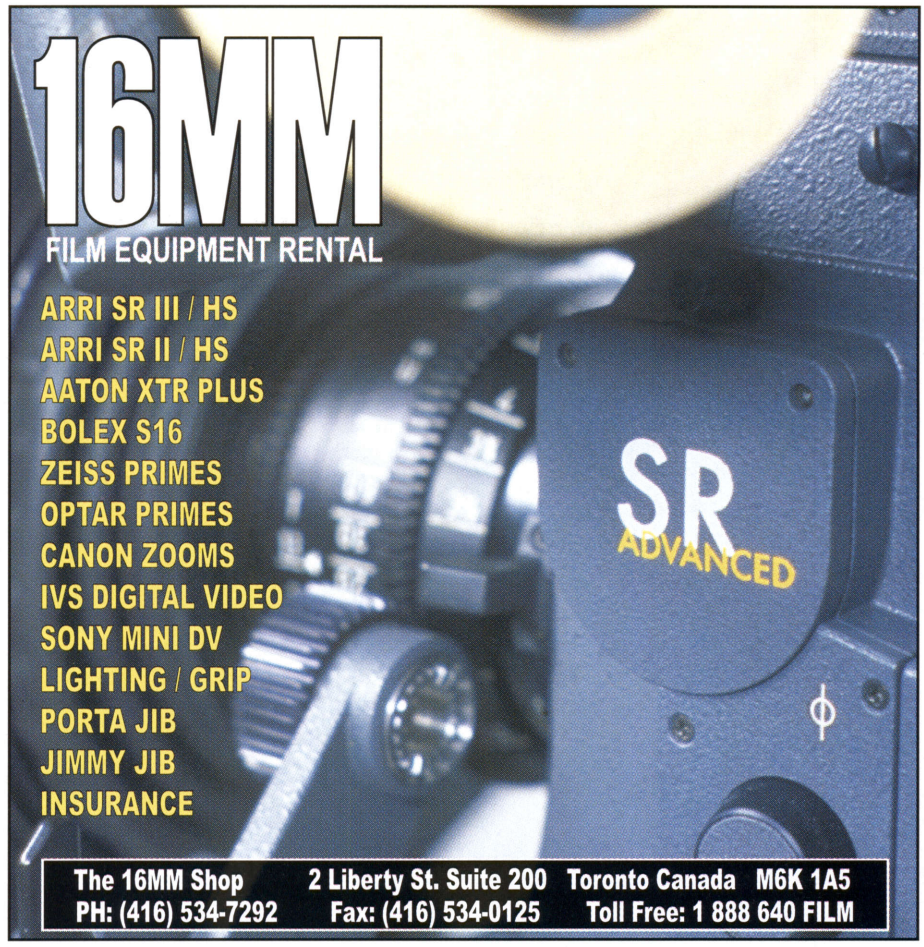
Physical Optics unveils its 310/320 Fiber Optic Multi-Channel Video/Audio/Data Transmission System. The system allows for simultaneous transmission of two-, four- or eight-base band video, stereo audio (balanced or unbalanced), and RS-232/RS-422 data channels over a single multi-mode or single-mode optical fiber. The series allows for both unidirectional and bi-directional communication. It also offers greater specification of video/audio transmission, and highly scalable channel capacity.

Physical Optics Corporation, (310) 320-3088, fax (310) 320-8067, website: www.poc.com.

Aerial Stability for HD

SpaceCam Systems, Inc. has joined the arena of High-Definition production by modifying its gyrostabilized camera platforms to accommodate HDTV camcorders. Working closely with Plus 8 Video, SpaceCam president and system designer Ron Goodman and his engineering staff have successfully adapted Plus 8's Sony HDW-700 HDCAM to be used in a SpaceCam system aboard an Astar helicopter.

During test flights, the aircraft was piloted by Craig Hosking, while the camera system was operated by Goodman. "The initial evaluatiuon test was successful," Goodman reports. "The stability we get with the HD camera is



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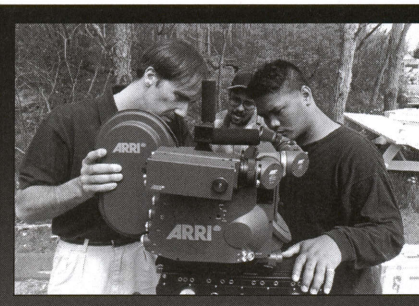

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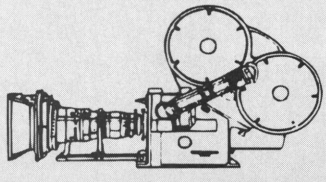

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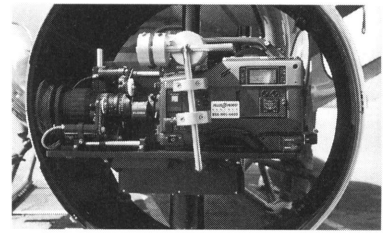


actuall better than what we get with our film camera systems because there are no internal mechanisms in motion that can cause instability."

Says Hosking, "I remember 10 years ago trying to bolt an HDTV camera onto a Jet Ranger. We had so much bulky equipment crammed inside the helicopter that I could barely get off the ground. We've come a long way since then. With the camcorder in the SpaceCam's nose mount, we're now able to provide full, aggressive SpaceCam-type filming for HDTV."

SpaceCam Systems, Inc., (818) 889-6060, fax (818) 889-6062; Plus 8 Video, (818) 845-6480.

Computer-Based Opticals Service

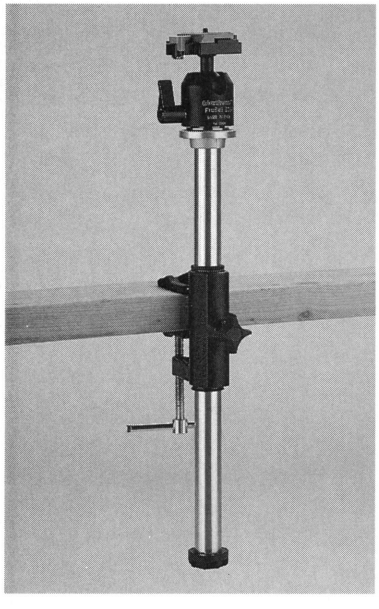
The postproduction house Creative Entertainment Group (see "Post Process" in AC July '99) has joined forces with Digital Opticals, Inc., a start-up firm that uses computer technology to create traditional film optical effects and special visual effects.

Digital Opticals combines highly skilled freelance artists with the latest advances in computer technology to create their effects at competitive rates. Under the supervision of Ziad Seirafi and Scott Suess, Digital Opticals offers 3-D computer animation, 2-D compositing, graphics and on-set supervision. The company also provides a breakthrough process that applies the merits of digital technology to traditional film opticals such as fades, wipes and dissolves at savings of up to 25 percent with greater speed and efficiency.

This strategic alliance will allow CEG to offer its clients the ability to create high-quality film opticals, digitally and with no generation loss. Through the agreement, Digital Opticals will open shop at CEG's Los Angeles-based facility.

Digital Opticals will offer standard dissolves, wipes and fades, as well as visual effects and graphics capabilities. By choosing to go digital instead of optical, filmmakers can instantly tweak and playback film transitions before rendering. Previously, filmmakers were forced to expose, develop and print film before making changes. "The idea of digital opticals is a process whose time has come. We've launched Digital Opticals to deliver the promise of digital technology to the realm of optical printing," says Ziad Seirafi, the company's president and well-known visual effects producer, whose credits include the feature films *Double Team* and *Knock-Off* and the series *Tales of the Crypt* and *Star Trek Voyager.* Demo screenings are available.

Creative Entertainment Group, (310) 229-3505, fax (310) 229-3508.



Lightweight Camera Supports

Bogen Photo Corp. has unveiled a new line of lightweight Manfrotto tripods that are intended for today's smaller, lighter DV cameras. The 3011V (bright aluminum finish) and 3211V (black adonized finish) tripods are light and sturdy, featuring a single-leg position design and a long, reversable center column for height adjustment. Both offer rapid-action level leg locks, rubber feet with retractable steel spikes, and comfortably padded leg protectors.

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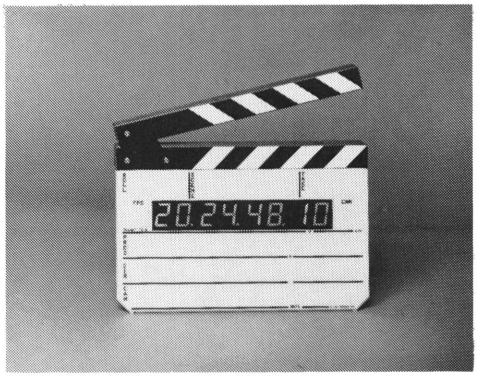

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35 MM REFLEX

The Fries model 435 is a new general purpose MOS production 35mm camera. With its optical printer compatible register pins, steadiness and 150 FPS speed. The 435 is ideally suited for special effects, commercials or any photography where a quality steady image is desired.

The 435 is a spinning mirror reflex camera with a 170 degree blanking shutter. The internal 30VDC motor runs the camera from 2 to 150 FPS forward and 2 to 50 FPS reverse, in one frame increments all crystal. The camera is equipped with take-up and supply torque motors.

There are both 1000 ft. and 400 ft. displacement type magazines. A new feature is the light valve which allows the operator to direct all the light to the viewing system, or to the video assist, or combo which splits the light between both viewing and video assist.

35 mm, Reflex Camera

WHY NOT SEE THE WHOLE PICTURE?

The new Fries Director's Viewfinder allows the director to view the full camera aperture .980 x .735, thru the same lenses that will be used on the camera when filming. Why aren't you getting the whole picture?

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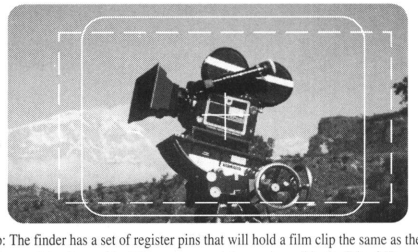

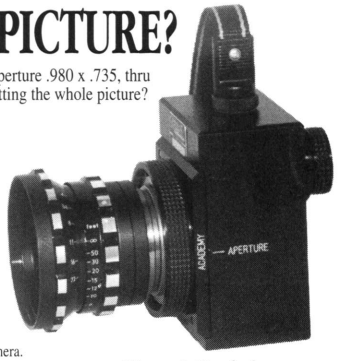

Film Clip: The finder has a set of register pins that will hold a film clip the same as the Fries camera.
Groundglasses: Interchangeable. The same groundglass as is used in the Fries 35R and 35R3 cameras.

Director's Viewfinder

Fries Engineering designs and manufacturers special effects cameras and conversions in 35mm, 65mm and Vistavision including high speed, time lapse and motion control.

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The 501 Pro Video Head provides smooth movement through 360 degrees of pan and +90/-60 degrees of tilt, each with separate lock and drag adjustments. It includes a quick-release plate with ¼"-20 and ⅜" camera screws.

The 3211V-501 video combo offers a 3011V tripod with a Manfrotto 501 Pro Video Head, and a fitted 3280MV carrying bag.

The Column Clamp is designed to be used in conjunction with removable tripod columns and heads. The clamp attaches securely to any solid structure up to 2.35' thick, including tabletops, deck railings, fences and tree limbs. It accepts columns from .98" to 1.1" in diameter, which can be locked into position at any desired height.

Bogen Photo Corp., (201) 818-9500; fax (201) 818-9177, e-mail: info@bogenphoto.com; website: www.bogenphoto.com.

Canon Primes for HD

Birns & Sawyer has just expanded its inventory to include gear for High-Definition video. A key part of their package is a new set of Canon prime lenses (EJ6mm, 10mm, 15mm, 24mm, 35mm). "Offering the tools for HD video allows Birns & Sawyer to present one more option to our customers," says Robert Ballo, director of Advanced Technology Products for Birns & Sawyer. "Canon is well known in the film community, and people looking into HD will be very responsive to the name." Backed by Canon, Birns & Sawyer is counting on their new prime lenses to help get their clients excited about shooting in HD. Featuring an iris T-stop, gear rings for film-style accessories, and a focus scale calibrated so that it is measured 48mm to the rear of the lens/camera interface, Canon's full line of HDTV prime lenses has become central to an increasing number of HD productions.

Birns & Sawyer (323) 466-8211, fax (323) 466-7049, e-mail: info@birnsandsawyer.com, web site: www.birnsandsawyer.com. ■

Points East

Tiffen Preps New Tech Center

by Eric Rudolph

For more than 50 years, the Tiffen Company has been closely associated with Hollywood cinematography. Surprisingly enough, while Tiffen has a West Coast Technical Center in Burbank, the filter manufacturing firm has always been based in New York. In acknowledgment of its Gotham origins and in response to the Eastern seaboard's recent filmmaking boom, Tiffen plans to open its first East Coast Technical Center this fall in Manhattan.

However, that's not the only news being generated from the company's Hauppauge, Long Island headquarters. Tiffen recently spent $5 million to upgrade and expand its manufacturing facility and increase its inventory to assure faster delivery for its line of 2,000 filters. Also, at the recent ShowBiz East conference, Tiffen debuted a significant technical advance to its popular Diffusion/FX filter line: the upgraded filters offer more efficient diffusion without producing glowing highlights or star artifacts.

At Tiffen's popular Burbank Technical Center, West Coast cinematographers can relax in pleasant surroundings while learning about new products and techniques from an entire range of visiting manufacturers. Likewise, the East Coast Technical Center will be an "open idea exchange and a year-round trade show with a relaxed one-on-one educational environment," according to Tiffen president/CEO Steve Tiffen. "We'll have weekly educational seminars and plenty of student and independent cinema outreach."

According to Steve Tiffen, the company is dedicated to supporting its creative people, an approach that could be termed "enlightened self-interest." As he puts it, "Frankly, if we don't support the artists, why should anyone buy our products? It's not just a matter of designing and making the best filters — we service and support our customers."

The East Coast Technical Center will be located in the heart of midtown Manhattan at 2 Penn Plaza, near the Penn Station rail center and Madison Square Garden sports arena. "Anyone within the Northeastern corridor has a relatively easy trip [to get there]," notes Tiffen. "People from Boston and Washington can come in by train for the day, visit our Tech Center and see a Rangers or Knicks game."

Tiffen is also known for solving cinematographers' specific problems on a rush, custom basis. Quite often, the impromptu devices that result from these brainstorming sessions become regular products. "We're the manufacturer, not a reseller," Tiffen points out. "All of our filters are made right here at our Long Island facility, so when someone comes to us with a special need, we try to identify the solution and turn out a new filter within 24 hours, whenever possible. When Woody Omens [ASC] wanted a specific day-for-night look for *Boomerang,* we were out on the set talking with him, and within 24 hours we had a unique product that solved his problem. That sort of customized one-on-one approach is a way of life around here. We'll even do that type of thing for film students. We offer a student loaner program, and we make special filters all the time for independent filmmakers."

However, while Tiffen's products have long garnered rave reviews, the firm has often had problems filling orders rapidly. Steve Tiffen readily acknowledges that slow delivery was once "a continual suffix to the Tiffen name. That came from the fact that we have 2,000 different filters in all of the various sizes. But that is in the past. Cinematographers are astounded to learn that today, 'back-ordered' means at the most a week. Our deliveries are now the best in the business. We recently spent $5 million to increase inventory — 98 percent of our orders are now right there on the shelf — and to increase our manufacturing capability so that we can produce more goods more rapidly."

Tiffen has always been a family-run business, and Steve's brother, Ira, holds the post of senior vice president in charge of R&D. In this position, Ira represents the first line of defense for cinematographers who present him with all manner of challenges — both vague and specific in nature.

"When Adam Greenberg, ASC was shooting *Inspector Gadget* for Disney, he wanted something to liven up the skies of Los Angeles," Ira says. "I sent him the first prototype of something we'd been working on which we hope to introduce later this year. Unlike a regular polarizer, which just darkens the sky, this new [as yet unnamed] filter makes the sky an intense blue — it's unbelievably beautiful. It also has other applications that I can't talk about yet."

Ira is also regularly asked to devise filter solutions that have a direct impact on dramatic visual storytelling. "On *Casino,* the filmmakers wanted to isolate and highlight Robert De Niro visually in some shots. We made Robert Richardson [ASC] some 16" by 6.6" twin matching filters: the left side of the twin

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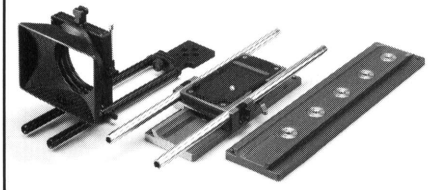

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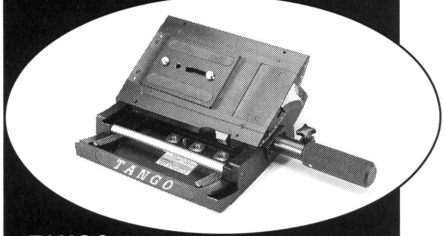

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filter had a gradiated color or neutral density to the left, and the right side had the gradation to the right. The two sides could be slid together or apart to gradually color or dim the complete image. They could also be used to vary the clear space between the gradiated sections, which is what Richardson did did to isolate De Niro."

At press time, Tiffen's new and improved diffusion filters had just become available. Ira expounds, "About a decade ago, we introduced the Soft/FX filter, the first of its kind to use tiny lenslets in the glass. By diffracting light throughout the internal portions of the diffusing pattern, it created greater diffusing efficiency than a net.

"As successful as the Soft/FX filters were, I was asked to come up with an improvement, so I focused to a great degree on minor artifacts. Any filter with lenslets tends to create a refraction of highlights that causes a mild glow around lights in the scene — this can be a telltale sign of filtration that many cinematographers wanted the option of avoiding.

"To help lose that optically enhanced look, I computer-designed very tiny optical shapes that minimize the highlights' refractive characteristics. These optical shapes are chemically etched into the surface of the glass instead of being embedded like lenslets. The etching gives these new filters better capability to diffuse fine details, while providing a sharp image overall and a minimum of highlight refraction.

"Additionally, I took the concept of a net mesh and re-created it as a very fine dot pattern. However, this new design doesn't have a net's intermeshing lines, which tend to cause star artifacts."

Ira proudly notes that these new products are a direct result of feedback from cinematographers. "The constant exchange of ideas enables us to learn what types of products they want, and then make and market them. That focus on feedback is a good part of the reason that we've won two Academy Awards for technical achievement [in 1985 and 1993] and an Emmy for general technical excellence just last year." ■

Books in Review

by George Turner

Serials and Series: A World Filmography, 1912-1956
by Buck Rainey
McFarland, library bound, 331 pps., $95
ISBN 0-7864-0449-3

If you love — and can afford — big, fat reference books loaded with information not to be found elsewhere, this hefty tome from Dr. Buck Rainey, the sage of Tishomingo, Oklahoma, is a real find. Almost everybody has encountered movie *serials* from time to time, even if only via TV or videos. Plenty of us granddads spent our school years looking forward to each Saturday's serial episode at the Rialto. Even this serial enthusiast was surprised to find that Rainey rounded up information on no less than 471 serials from the United States and 136 more from foreign lands.

In their heyday, serials were known as "cliffhangers" because each chapter ended with the hero and/or heroine in some deadly peril, followed by a title imploring the patron to return next week for the rescue. The *series* film was a similar type of show, served up in weekly installments that offered a complete individual story *without* cliffhangers. Series films are gathered here as well: 100 from the States and 37 from various other countries, including France, Germany, Italy, Spain, England, Denmark and Norway.

All told, this survey serves up a total of 744 entries! Save for a few obscure postings, all offer information about the year a film was made and a plot synopsis, as well as its country of origin, studio, episode numbers and titles, running times, and credits. There are plenty of photographs (one or more to the page), and most are unfamiliar.

Edison's *What Happened to Mary,* made in 1912, is generally acknowledged as the first serial, despite its lack of a cliffhanger. The first ultra-expensive serial was the 20-episode *Gloria's Romance,* for which stage star Billie Burke was paid $4,000 per week. The longest series was *The Hazards of Helen,* which began in 1914 and starred Helen Holmes in 48 episodes and Helen Gibson in 71 more installments.

A few errors do crop up, but no more than usual in a work of such scope. Although many writers take a condescending view toward the chapter plays, Rainey is refreshingly frank in his assessment of their worth: "There was never any doubt that profit was the essential reason for serial production… In this respect the serial was analogous to the program Western, with which it was quite often co-billed. Neither was meant to leave an indelible mark on filmdom, and the fact that both did is a tribute to all who worked so conscientiously in this subworld of Hollywood. The haunting charm that both the serial and the program Western possessed — a charm that quickly enveloped the mind, heart and spirit of boyhood — remains unsurpassed in Hollywood's glorious history."

Landscapes of Loss: The National Past in Postwar French Cinema
by Naomi Greene
Princeton University, 234 pps., cloth $55, paper $18.95
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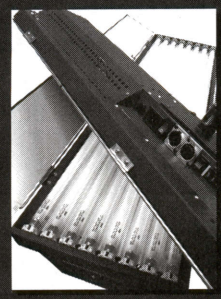

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French and Film Studies links the ups and downs of post-World War II France to the cinema of that traumatic era. There's definitely plenty to explore, given that France once boasted the world's leading motion picture industry, and has seen its national leadership seriously damaged by modern history's heavy fist. Memories of violent politics, the Vichy regime, crumbling ideologies and the pangs of decolonization haunt the screen in a series of films that offer melancholy memories and a nostalgia for past glory.

In these contexts, the works of some outstanding French filmmakers are explored — particular emphasis is placed upon pictures directed by Alain Resnais and Bertrand Tavernier. Greene's prose well-represents the fact that "films have both reflected and formed national images past and present." A brief aside to the publisher: a few stills would have been very welcome. After all, we are talking about motion pictures.

Best of British: Cinema and Society from 1930 to Present
by Anthony Aldgate and Jeffrey Richards
Taurus/St. Martin's,
262 pps., cloth, $22.50
ISBN 1-86064-288-8

In this revised and expanded edition of a popular British textbook, the authors combine a study of film history between 1929 (the introduction of talking pictures in England) and the present, with a historical overview of the intervening period's events. It's a solid idea, since a nation's concerns are often reflected by its contemporary movies. The titles given detailed treatment were chosen for their relevance to areas of general historical interest: the colonial empire, politics, wars, crime, industrial relations, class, education and sex.

The films in question from the original edition include *Sanders of the River, South Riding, A Canterbury Tale, The Life and Death of Colonel Blimp, Fame is the Spur, The Guinea Pig, The Ladykillers, I'm All Right Jack* and *If.* The upgraded edition includes three brand-new chapters. One deals largely with the 1949 masterpiece *The Blue Lamp,* which marked the beginning of a more realistic and understanding depiction of the police. Also new is a study of *The Loneliness of the Long Distance Runner* (1962), a solid representative of the "British New Wave" of social realist films that reigned briefly between 1959 and 1963. The era of Margaret Thatcher's conservative regime is introduced through a chapter that begins with a marvelous gangster film from 1981, *The Long Good Friday,* and culminates with the 1989 picture *Scandal,* which centers on the 1963 disgrace of War Minister John Profumo for lying to the House of Commons about his relations with a prostitute. The latter film was released less than two years before Thatcher's resignation.

The thesis works well and should be appreciated by any reader interested in 20th-century history. ■

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Next Month in *AC:*

Star Wars: Episode I
The Phantom Menace
Director:
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GEORGES MÉLIÈS

by Ray Zone & Chuck Roblin

IN 1895, WHEN PROFESSIONAL MAGICIAN **GEORGES MÉLIÈS** AT THE AGE OF THIRTY-FOUR SAW THE **LUMIÈRE BROTHERS'** FILMS HE DEVISED HIS OWN CAMERA AND PROJECTOR. HE THEN BEGAN TO SHOW HIS TRICK AND FANTASY FILMS AT HIS **THEATRE ROBERT-HOUDIN** AT THE **PASSAGE DE L'OPERA IN PARIS** WHERE HE HAD BEEN PRESENTING MAGIC ACTS: **TABLEAUX VIVANTS**, MARIONETTES AND ELECTRICAL WIZARDRY.

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GEORGES MÉLIÈS

MÉLIÈS' EPIC MASTERPIECE WAS THE **1902 A TRIP TO THE MOON**, BASED ON THE **JULES VERNE NOVEL**. AS WITH EVERY ONE OF HIS FILMS MÉLIÈS ACTED IN, DIRECTED AND PAINTED ALL THE SETS AND PROPS HIMSELF

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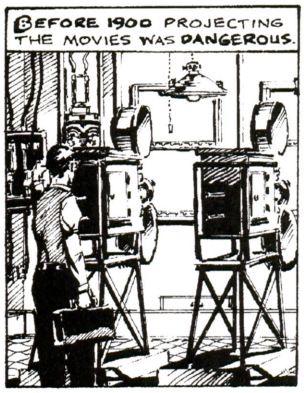
Next Month



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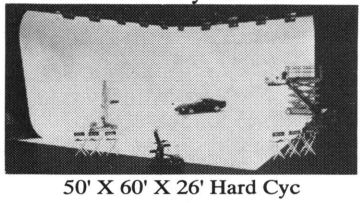

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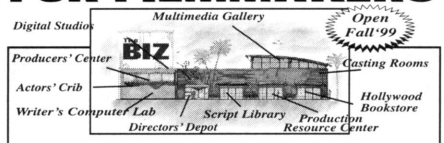

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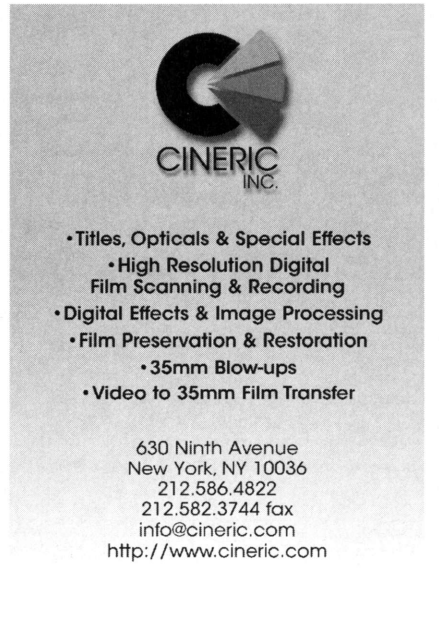

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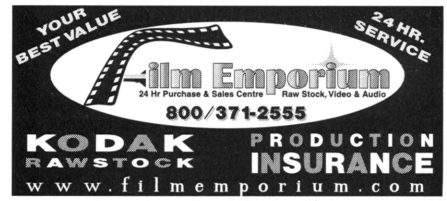

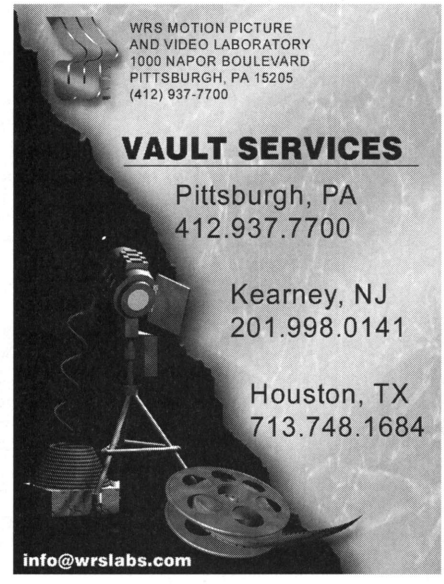

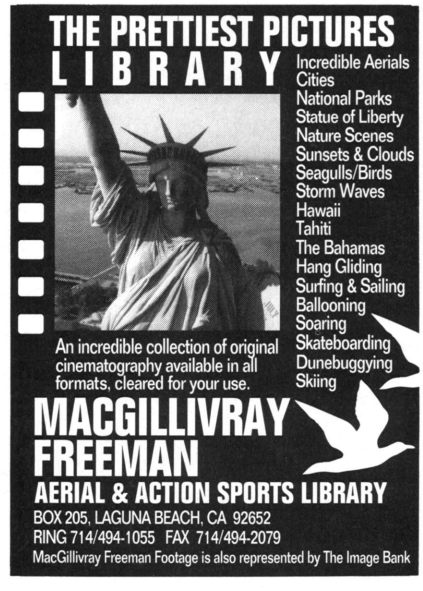

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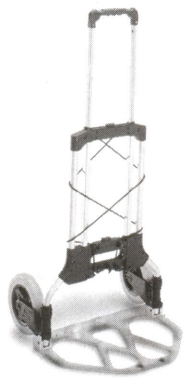

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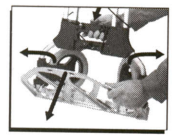

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In Memoriam

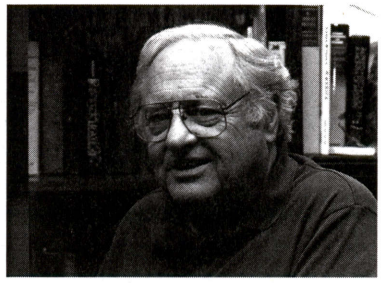
George E. Turner, the former editor of *American Cinematographer* magazine and the acknowledged historical conscience of the ASC, died on June 20, 1999, in Pasadena. He was 73.

Turner had recently launched an ambitious new phase of the career he called "moving-picture archaeology," beginning with the publication of a 20th anniversary edition of his collaborative reference work *Forgotten Horrors* (co-authored with Michael H. Price) and new research toward a revision of the trail-blazing 1975 book *The Making of King Kong* (co-authored with Orville Goldner).

Turner joined *AC* in 1982 and served as editor from 1985 to 1991, emphasizing a balance between the nuts-and-bolts practicality of filmmaking and the medium's artistic strivings. Demonstrating the unabashed, conversational passion of a natural-born movie buff, he rendered the distant history of cinema as accessible and fascinating. His writing, as well as his nurturing of the other authors within his orbit, bespoke a practice-what-you-preach philosophy. This attitude was born of Turner's own varied background, which included stints as a storyboard artist (one of his last projects was *Mars Attacks!*); as a designer of glass and matte paintings and art titles (for such films as *Dead Men Don't Wear Plaid* and *One from the Heart*); and as a writer, director and photographer of his own productions.

Although teaching, journalism and advertising jobs commanded most of his energies from the 1950s through the late '70s, Turner had prepared himself for a career in film since childhood. Encouraged by his father, a cowboy-turned-barber who occasionally golfed with Oliver Hardy, the Texas-born Turner's interest in movies was further stoked by the classic 1933 film *King Kong*.

"It was during a few years' residence in Santa Monica that *Kong* captured the 7-year-old's imagination and held it for 66 years," the sculptor and visual effects artist Douglas Turner — one of George's four sons — told a memorial gathering at the ASC Clubhouse on June 24. This influence, coupled with a trip to see dinosaur reconstructions in Chicago, "began a lifelong passion for dinosaurs and movies." At



the age of 14, a growing interest in art led George to an apprenticeship with the great Texas muralist Ben Carlton Mead.

During U.S. Navy service in the Pacific Theatre of World War II, Turner had some memorable encounters with Komodo dragons and gigantic bats that he swore "looked like pterodactyls." He also appeared as a prominent extra in Universal's all-star military musical, *Follow the Boys* (1944). Later, after completing a degree in art and literature at West Texas State College, Turner trained at the Art Institute of Chicago and the American Academy of Fine Arts. His mentors included one of his earliest idols, *Tarzan* illustrator J. Allen St. John. Turner's Chicago classmates included Gahan Wilson, who years later would sneak a reference to George into a *Playboy* cartoon. The innumerable artists whose work captivated Turner included comic-strip pioneers Harold R. Foster, Burne Hogarth and Alex Raymond; as well as classical greats Monet, Michaelangelo, Velasquez, Remington, and Russell.

Turner's inspiration as a writer stemmed from a combined love of reading and a pragmatism born of artistic ambition: his first forays into writing were articles designed to create a market for his illustrations.

One of Turner's first collaborators was his first wife, portrait artist Leona Turner. Together, the couple opened the first art gallery in Amarillo, Texas. While starting a family that would grow to include four sons, the Turners crafted a vast variety of postal-card gag cartoons, advertising images, and comic strips.

As a founder of *Southwest Heritage* magazine (1966-69), Turner announced himself as a journalist/historian capable of touching a popular readership with his enthusiasm and gift for storytelling. Early books such as *Secrets of Jesse James* and *Murder in the Palo Duro* were juggled with a demanding schedule as an artist and feature writer for the *Amarillo Daily News & Globe-Times*. Turner later tackled the watershed project *The Making of King Kong,* which brought him to the attention of pioneering special effects expert Linwood G. Dunn, ASC, who encouraged Turner to move to Los Angeles. George acted on his advice after marrying a newsroom colleague, Jean Wade Turner, who also became a mainstay at *American Cinematographer*. They moved to California in 1978.

Turner's bibliography includes such authoritative works as *The ASC Treasury of Visual Effects* (with Lin Dunn), the multi-author treasury *The Cinema of Adventure, Romance & Terror,* and *Human Monsters: The Bizarre Psychology of Movie Villains*. His trade memberships included the MPAA, the Motion Picture and Television Academies, and the Visual Arts Society (which he helped to found), as well as his cherished associate membership in the ASC.

In addition to his son Doug, George's survivors include sons Lowell Turner, David Turner and James Turner; stepson Kent Wade; stepdaughter Nora Wade Lee and son-in-law Matthew Lee; and several grandchildren and godchildren. A private ceremony followed the tribute at the ASC Clubhouse, which was filled to capacity with friends, colleagues and loved ones. — Michael H. Price

Filmmakers' Forum continued from page 120

Candlelight." The paintings are closely related, as each is a seated, full-figure portrait. They are contemplative images that seem to renounce the vanities of worldly life. Prominent in several of them are *momento mori* symbols such as a skull. All are illuminated by a single candle or oil-wick flame. The source is centrally placed in the painting, and the Magdalene figure stares into it as if the light itself will give answer to her unexpressed yearning. The most moving and articulate of the series is called *The Magdalene With the Smoking Flame,* and by great good fortune it is in the permanent collection of the Los Angeles County Museum of Art, where it can be readily viewed by many readers of this magazine. I never fail to pay homage to it when I visit the collection. It is also the painting that Néstor called forth as the central image of a wonderful slide presentation he gave about light and the cinema. As I walked through this small show, I felt Néstor's presence and imagined the glee he would have felt at seeing these four works together.

Néstor had a truly childlike curiosity, not only before art but before the world around him. I remember the night we were filming the great wheatfield fire in *Days of Heaven.* Dozens of extras were beating out the flames, and tractors churned the earth cutting firebreaks. At one point, I turned off the handheld Panaflex and looked to Néstor for guidance on what he and [director] Terry Malick wanted next. Néstor turned to me, holding a grasshopper between his delicate fingers, with his impossibly thick glasses shoved well up on his forehead. He lifted the insect skyward until it was less than three inches from his eye, perfectly in focus between the panorama of flames, and said, "Look, John, look how beautiful it is."

Like many of the great European cinematographers, Néstor was imbued with a sense of the history of Western art as part of his education. For good or bad, this artistic cloak does not lie so lightly on the shoulders of we American cinematographers. I was able to spend more than two years in film school at USC without any required exposure to art history, and I doubt that the situation is much different today. I am not necessary decrying this, however. There is something very American about each of us discovering and formulating our individual aesthetic parameters. Our great cinematographers often tend to be mavericks, and their style *sui generis,* owing little that is visible to painterly antecedents, regardless of their profound immersion in those traditions. Billy Bitzer, Karl Struss, Gregg Toland, James Wong Howe, Haskell Wexler, Conrad Hall, Gordon Willis, Owen Roizman, Caleb Deschanel, Allen Daviau and Robert Richardson are all artists who have gone their own way and imbued their work with compositions and lighting styles that are uniquely their own.

Néstor was not really of this breed, for he moved within the guidelines of a European tradition. Being Catalan, he rubbed shoulders early and always with the world of Spanish art that produced Velasquez, Goya and Murillo. In this world of Catholic Spain, light as a metaphysical immanence was inseparable from its real-world sources. Indeed, Néstor often spoke of light with a quasi-religious veneration. It was not just by happenstance that he photographed so many films by Eric Rohmer. The Jansenist in Néstor held a profoundly circumscribed doctrine of what constituted good cinematography. He eschewed tricky and showy camera techniques and favored an uncompromising single-source light such as that found in the works of de La Tour. Look again at his interview in the cinematography documentary *Visions of Light* for a closely argued presentation of his views.

In his review of American art, *American Visions,* the great, transplanted Australian critic Robert Hughes reiterates the maverick and individualistic strain in American artists. That is not to say we are without traditions and influences, but that they are subsumed by the force of the American character into the forging of a personal vision, a palimpsest of sources underlying and grounding each artist.

Nothing better illustrates this dichotomy for me than the facing interviews of Néstor and Haskell Wexler in *Visions of Light* as they discuss *Days of Heaven.* Néstor, the proud European traditionalist, defends the cultured ethos of Europe and the languid and lambent light of his favored "magic hour." Haskell, who photographed major sequences for the film, argues for a bold, active camera that is well-shown in two scenes that frame the film: the opening handheld sequence of Richard Gere in the powerful and assaultive light of a steel-factory blast furnace, and the fragmented and frenetic riverbank chase sequence near that end, which was also shot at "magic hour," but with none of the quietude that marks Néstor's scenes. This seemingly unlikely mixture of styles helps supercharge the entire film.

Néstor's ideas had a profound effect on me intellectually as tempering principles that gave form and discipline to the my work, and I deeply miss him as a friend and colleague. However, as an American cinematographer, my heart and emotions must ride the edge of the bold and sometimes unruly beam of light that is thrust forth — by maverick artists such as Wexler, Hall and Richardson — like a lightning bolt onto the waiting and eager ribbon of emulsion as it pauses so briefly before the camera's open shutter. ■

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the Academy of Motion Picture Arts and Sciences' headquarters on the evening of Sunday June 13, saw the introduction of the ASC Student Film Award in association with AMPAS. Russell Carpenter, ASC presented this new cinematography prize to David A. Armstrong, the director of photography on *John,* a production from the American Film Institute. Directed by Marni Banack, the 21-minute color short tells the tale of a men's-room attendant who is in jeopardy of losing his job. Armstrong was selected by a panel of cinematographers who are members of both the ASC and the Academy. ■

From the Clubhouse

Kuras Earns Vision Prize

On June 11, Ellen Kuras, ASC received the Kodak Vision Award during the 1999 Women in Film (WIF) Crystal Awards luncheon held in Los Angeles. The Vision Award is presented annually by Women in Film to a director of photography with notable artistic achievements in features and/or documentaries who is also deemed to be a positive role model. According to WIF President Iris Grossman, Kuras qualified on all counts. "Ellen has filmed some of the best documentaries made during this decade. Audiences at Cannes loved *Summer of Sam* [see *AC* June '99], and she also did great work on *The Mod Squad*. She is an exceptional role model for young women who are contemplating careers as cinematographers."

Kuras studied anthropology at Brown University, and gained an interest in film while working as an adjunct. She served as a production assistant, sound editor and camera assistant before becoming an electrician and gaffer to learn the craft of lighting.

She launched her career in 1987 with *Samsara*, a documentary filmed in Cambodia which garnered some 25 prizes, including the 1990 Sundance Film Festival Jury Award for cinematography. Kuras also earned rave reviews for her black-and-white camerawork on *Swoon*, Tom Kalin's critically acclaimed indie feature recounting the Leopold and Loeb murders of the 1920s. She's also a two-time winner of the Sundance Festival's Best Dramatic Cinematography Award — in 1992 for *Swoon* and 1995 for *Angela*. Kuras was later nominated for an Emmy for *Century of Women*. Her other credits include *Unzipped*, *I Shot Andy Warhol*, *Postcards from America*, and *If These Walls Could Talk, Part I*.

"I feel incredibly lucky to have had the opportunity to work with talented directors and other filmmakers who have something important to say about the human condition," says Kuras. "I am also lucky to be working at a time when cinematographers are getting recognition for their artistic achievements. I love my work and thrive on the relationships that I've developed with directors by trying to understand what's in another person's mind and helping them tell their stories in a creative way."

New ASC Inductees

A native of Buffalo, New York, **Steven Bernstein** spent much of his life in the United Kingdom. After receiving undergraduate degrees in English and Philosophy in his adopted country, he attended graduate school at the University of Maryland. Upon returning to Britain, Bernstein began working in news and on documentaries at the BBC and ITV. He later relocated to China, where he gained experience as a cinematographer while shooting social-issues documentaries. After returning to the U.K., Bernstein began filming feature-length dramas for the BBC, ITV and Channel 4. Venturing into the commercial realm, he collaborated with director Tony Kaye on hundreds of award-winning commercials. In 1988, he wrote *Film Production* (Focal Press), which has been printed in several languages and is widely used as a university textbook. His credits include the television productions *Bad Cop, Bad Cop; The Monroes*; *The Secretary* and *Killing Time*, as well as the feature films *Like Water for Chocolate* (co-credited with Emmanuel Lubezki, ASC), *Trade Off*, *Moondance*, *Curdled*, *Bulletproof*, *Underworld*, *Murder at 1600*, *Mr. Jealousy*, *The Waterboy*, *The Wood* and *More Dogs than Bones*.

New York City native **John A. Lindley** graduated from New York University's School of the Arts in 1973. He began his career as a production assistant on a series of Gotham-based PBS programs drawn from classic American short stories. Lindley then took on tasks as an assistant cameraman and gaffer on documentaries. In the late Seventies, he began shooting BBC documentaries in New York. After securing a job as cinematographer of the CBS-TV series *Nurse*, he continued his experience on such MOWs as *The Gentleman Bandit*, *The Demon Murder Case*, *Deathride to Osaka*, *An Invasion of Privacy*, and *Badge of the Assassin*, along with the mini-series *LBJ: The Early Years* and *Poor Little Rich Girl*. His feature resumé includes *The Goodbye People*, *Home of the Brave*, *The Serpent and the Rainbow*, *True Believer*, *Field of Dreams*, *Sleeping with the Enemy*, *Father of the Bride*, *Sneakers*, *I Love Trouble*, *The Money Train*, *Pleasantville* (see *AC* Nov. '98) and *You've Got Mail*.

New ASC Associate

Wisconsin native John A. Gresch is lighting sales manager for Arriflex Corporation's West Coast offices. He's a graduate of Carnegie Mellon University's School of Drama, and has been involved with stage and studio lighting for more than 30 years. Gresch began his career in 1975 with Berkey Colortran and was instrumental in the design and sales of the firm's initial line of lighting fixtures. In 1980, Gresch co-founded Excalibur Industries, a custom case manufacturer that extensively serviced the Hollywood film community. In 1986, He joined Arriflex, where he's responsible for the sales and marketing of Arri lighting products in the western United States. Gresch actively teaches seminars on lighting techniques and equipment for numerous film schools, trade shows and union locals. Married with two teenage boys, he's very active with his local church, the Carnegie Mellon alumni association and the Boy Scouts of America.

The ASC Student Award

The 26th annual Student Academy Awards, which were held at

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Filmmakers' Forum

Memories of Almendros

by John Bailey, ASC

For some time now, I have wanted to write about the great French New Wave cinematographer, Néstor Almendros. He was my friend and my mentor. His premature death in 1992, at the age of 61, was a loss not only to the world of cinematography but to all of cinema. Néstor's life was informed by his love of art — in particular, painting. His character was a convincing expression of the humanizing and ennobling power of a life sensitized by great art.

I first met Néstor in Paris in 1968 at the height of the French New Wave and of the student revolution that was sweeping Western Europe. I was fresh out of film school at USC and had gone to Paris to visit my future wife, Carol Littleton, who was studying there on a Fulbright Fellowship. I met Raoul Coutard, who, with each new Godard film, was redefining cinematography. I also met Willy Kurant, who many years later would photograph *China Moon* for me. But it was Néstor who first made me understand the importance of a knowledge of art history to my education as a would-be cinematographer.

Néstor Almendros was by birth a Catalan. He traveled widely, spending years in Havana. Eventually disillusioned by the Castro revolution, Néstor decided to leave, and he gravitated to the heady world of New Wave Paris. He developed long-term relationships with a number of directors, especially Eric Rohmer and Francois Truffaut. His very first film with Truffaut, *Bed and Board,* exhibited a painterly attention to color and composition that was new to the director's work.

To talk to Néstor about film was to talk also about painting and even about a very specific moment in painting: for Néstor, the development of single-point perspective in the early Renaissance had forever transformed how we experience art. Before this revolution, art on two-dimensional surfaces — whether mosaics, frescoes or pigments — was presented in an iconic and hieratic manner. Think of the luminous gold field we associate with Byzantine art, where there was no attempt to create a world that parallels the real one. The human figure was part of a greater landscape of angels and creatures of an unknown and dangerous metaphysical space.

The single-point perspective technique attempts to put on a flat surface a simulacrum of the real world. If you were to stand over the shoulder of the painter and glance from the painting to the world beyond with one eye shut, you would judge the skill of the painter partly in the work's faithfulness to the real world.

Inevitably, there arose from this artistic revolution a parallel concern with the quality and source of light as a modeling device. Like perspective, light was used to suggest depth, but light and shadow soon developed into dramatic tools. Light became the new elixir of painting, whether it be the dappled or *sfumato* effects of Umbrian landscapes, the soft "north light" of Flemish portraiture, or the dramatic shadowed sources of the French and Roman Mannerists. It was this latter school that provided the touchstone for Néstor's theory of light in painting and its application to the light of cinema.

One thinks of the single-source window light that is part embracing, part melancholic reverie of Vermeer's maidens; or of Hopper's solitary figures caught like moths in a nighttime lamp or impaled by a shaft of sunlight in an empty room; or of Caravaggio's and Rembrandt's Biblical and mythic figures rendered as demiurges in a world being born into or dying in an enfeebled light. In this great work, light is not just revealing the subject; it is partly the subject itself, immanent and dramatic. Nowhere is this more apparent than in a series of paintings by Georges de la Tour. De La Tour was one of the most emblematic and enigmatic painters of 17th-century France. Like Caravaggio, Vermeer, Rembrandt and Hopper, de La Tour's work is as much about light as it is about space. The human figures in much of the work of these painters are enveloped by light, a light that strips bare their souls.

Last year, for several weeks, the Metropolitan Museum in New York brought together four haunting paintings of Mary Magdalene by de La Tour, in an exhibit titled "Conversion by

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Almendros discusses a scene with actress Meryl Streep while photographing the period drama *Sophie's Choice.*

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